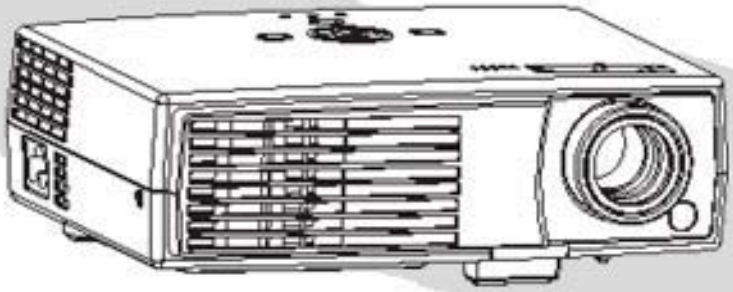
TOSHIBA

FILE NO. 330-200729GR
Rev.02

# SERVICE MANUAL

# DLP PROJECTOR

## *TDP-P9,TDP-PX10*



The above models are classified as green product (s) (*1), as indicated by the underlined serial number (s).
This Service Manual describes replacement parts for green product (s). When repairing any green product (s), use the parts described in this manual and lead-free solder (*2).
For (*1) and (*2) , see the next page.



Published in Japan, November 2007 GREEN

## (*1) GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

## (*2) LEAD-FREE SOLDER

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

### WARNING

**This product is manufactured using lead free solder.**

**DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT !**

The melting temperature of lead-free solder is higher than that of leaded solder by 86°F to 104°F (30°C to 40°C). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or PCB being soldered. Great care should be made to ensure high-quality soldering when servicing this product — especially when soldering large components, through-hole pins, and on PCBs — as the level of heat required to melt lead-free solder is high.

# ■ Safety Instructions

## SAFETY PRECAUTIONS

WARNING:
The chassis of this projector is isolated (COLD) from AC line by using the converter transformer. Primary side of the converter and lamp power supply unit circuit is connected to the AC line and it is hot, which hot circuit is identified with the line ( ⏦ ) in the schematic diagram. For continued product safety and protection of personnel injury, servicing should be made with qualified personnel.

The following precautions must be observed.

1: An isolation transformer should be connected in the power line between the projector and the AC line before any service is performed on the projector.

2: Comply with all caution and safety-related notes provided on the cabinet back, cabinet bottom, inside the cabinet or on the chassis.

3: When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as, control knobs, adjustment covers or shields, barriers, etc.

DO NOT OPERATE THIS PROJECTOR WITHOUT THE PROTECTIVE SHIELD IN POSITION AND PROPERLY SECURED.

4: Before replacing the cabinet cover, thoroughly inspect the inside of the cabinet to see that no stray parts or tools have been left inside.

Before returning any projector to the customer, the service personnel must be sure it is completely safe to operate without danger of electric shock.

## PRODUCT SAFETY NOTICE

Product safety should be considered when a component replacement is made in any area of the projector. Components indicated by mark ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. It is, therefore, particularly recommended that the replacement of there parts must be made by exactly the same parts.

## SERVICE PERSONNEL WARNING

Eye damage may result from directly viewing the light produced by the Lamp used in this equipment. Always turn off Lamp before opening cover. The Ultraviolet radiation eye protection required during this servicing.
Never turn the power on without the lamp to avoid electric-shock or damage of the devices since the stabilizer generates high voltages(15kV - 25kV) at its starts.
Since the lamp is very high temperature during units operation replacement of the lamp should be done at least 45 minutes after the power has been turned off, to allow the lamp cool-off.


### DO NOT ATTEMPT TO SERVICING THE REMOTE CONTROL UNIT.

Laser Beam may be leaked out when in disassemble the Unit. As the Laser Beam used in this Remote control unit is harmful to the eyes.

## Conventions

The following conventions are used in this manual

| | |
|---|---|
| Screen Messages | Denote actual messages that appear on screen. |
| Note | Give bits and pieces of additional information related to the current topic. |
| Warning | Alert you any damage that might result form doing or not doing specific actions. |
| Caution | Give precautionary measures to avoid possible hardware or software problems. |
| Important | Remind you doing specific actions relevant to the accomplishment of procedures. |

Table of Contents

# 1 System Introduction

## 1.1 Technical Specification

| | TDP-P9 |
|---|---|
| Display Type | 0.55" DMD/ 12 ˚/ LVDS-Type X |
| Resolution(Pixels) | XGA ( 1024 x 768 ) |
| Lens | Manual Zoom (1.17X)<br>F=2.5~2.74 f=22~25.5mm<br>Screen Size 34 – 307 inches |
| Contrast Ratio | 2000:1 |
| Uniformity | > 54% |
| Lamp | Osram E19, 200W |
| Projection Type | Front, Rear, |
| Input Source | D-Sub 15 pin, S-Video, Composite Video, YPbPr,<br>Audio in(Stereo phone jack), USB, |
| Video Compatibility | NTSC 4.43, NTSC-M<br>PAL-60, PAL-M, N, (B, D, G, H, I)<br>SECAM |
| Scanning Frequency<br>Horizontal Frequency<br>Vertical Frequency | <br>15 -80 KHz<br>50 – 85 Hz |
| Digital Keystone Correction | Vertical + / - 16 ˚ |
| Integrated Speaker | 1 x 2W |
| Noise Level | Less than 35 dBA in Normal mode, or 32 dBA in lamp saver mode |
| Environment | Operating:<br>Temperature:+5˚C ~ +35˚C (41oF–95oF)<br>Humidity:10% ~ 90%<br>Storage:<br>Temperature:-20 ˚ C to 60 ˚ C<br>Humidity:90% maximum ( No condensation ) |
| Power Requirement | AC 90 -264V, 50/60 Hz |
| Power Consumption | 260W Standby mode: less than 10W |
| Dimension | 210 x 65 x 165 mm(without elevator foot) |
| Weight | < 3 lb |

Note: Designs and specifications are subject to change without prior notice

Lamp Specification

**Product Type:** Short arc mercury lamp with reflector.

The product is a lamp system consisting of a short arc burner within a reflector and an electronic lamp driver.

| | |
|---|---|
| Type lamp | P-VIP 150-200/1.0 E19<br>Identcode: 489 43B |
| Type driver | PT VIP 200AC/100-240 H1<br>Identcode: 516914 |

## Initial Characteristics

Lamp power : 200 W

Measurement : Integrating sphere

Aperture: 6.0 mm round

**Power consumption**

| | | | |
|---|---|---|---|
| UV-output | UVA | 315-380 nm | 4 W typical |
| | UVB | 280-315 nm | < 0.1 W typical |
| | UVC | 248-280 nm | < 0.01 W typical |
| Total visible flux | | 380-780 nm | 42 W typical |
| IR | | 780-1650 nm | < 1 W typical |

**Note: More information about lamp replacement procedure, resetting lamp timer and lamp part number, please check the page 17.**

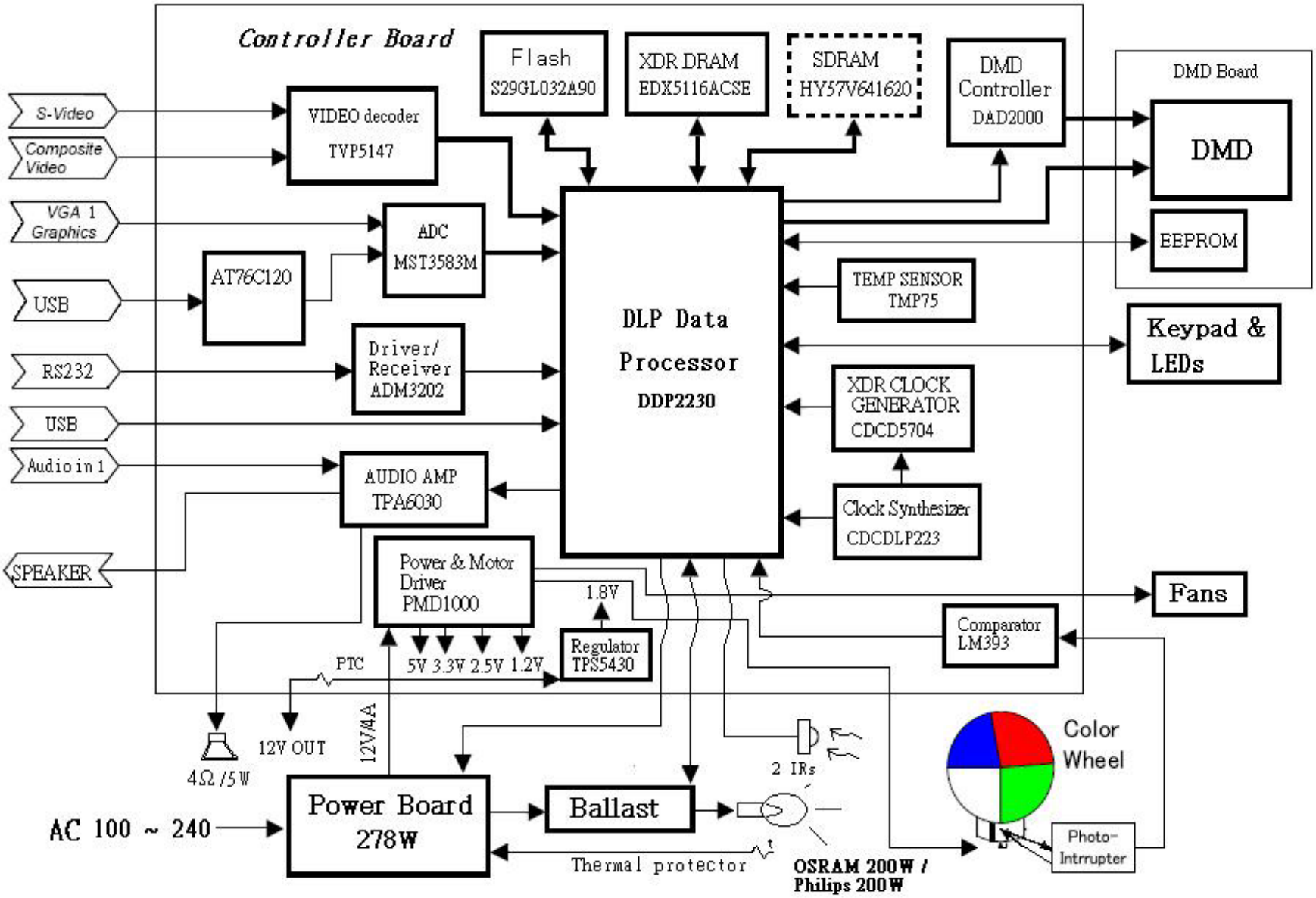
**Attention for handling**

- Do not touch the lamp until it has cooled completely, because the lamp is very hot during operation and immediately after turned off.
- The lamp has to be fixed firmly to the base or socket.
- Turn off the power supply during maintenance.
- Do not hold the lamp except outer surface of the reflector.
- Wear protective gloves and eyeglasses when handling the lamp.
- Any unusual shock or vibration to the lamp should be avoided.
- The lamp contains the mercury. Its breakage might cause mercury to flow out of the reflector. Please manage provision at the customer's product.
- Do not pull the lead wire and plug by more than 24.5N.
- Please be careful of handling the lamp because it is made of glass.
- Please notice for keeping or handling the lamp, because there is a projection of this lamp with reflector ahead.
- Do not touch the bulb and the mirror area of the reflector.

**Attention for use**

- Do not close or cover the lamp with any flammable stuff.
- During operation, the lamp is under extremely high pressure. Please manage provision at the customer's product to prevent fragments of bulb and mercury from flowing out of it. If the lamp bursts in case of an emergency, the sound will be occurred.
- Lamp operation should be with the specified lamp driver and the system ONLY.
- Do not look at the lamp directly during operations.
- Do not expose your skin directly. We recommend to you to put on something for protection for your skin. For example, long sleeve shirt, gloves, glassed and so on.
- Do not modify the lamp and never use a lamp that has been modified.
- Any unusual shock or vibration to the lamp should be avoided during operation.
- Do not use any broken lamps.
- Dispose of used lamps according to your local instruction.
- Do not turn on the lamp while the system is opened.
- The lamp contains mercury. If the lamp bursts during operation ventilate the area sufficiently to avoid inhaling harmful mercury fumes.
- Use the lead below 200°C to prevent a deterioration of cladding clad of the fluorocarbon resin.
- The lead wire insulation clad shouldn't touch the reflector.
- Exchange the lamp that has already passed the life time immediately.

## 1.2 TDP-P9 System Block Diagram



# 2 Firmware Upgraded Flow

This chapter provides the information regarding relevant equipments and upgrading procedure for firmware upgrade.

**Note:**

Please check the firmware and composer version before any firmware upgrade procedures. During firmware download period, please do not shut down PC or projector, this will cause flash memory's damage. And need to return the unit to manufacturer for flash memory recovery.

## 2.1 Setup Tool/Equipment

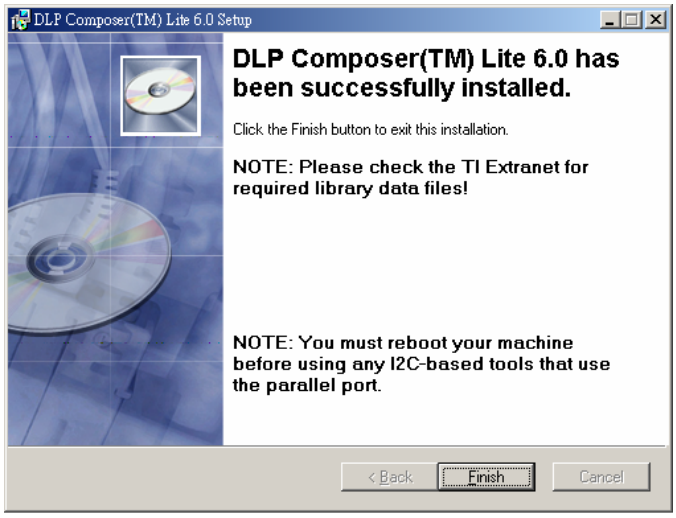
- Computer
- USB Cable (See the picture)
- Power Cord

## 2.2 Upgrading Procedure

**Installing [DLP Composer (TM) Lite]**

1. Double-click **[DLP Composer Lite vX.X Setup.exe].**
2. Installation starts. Click **[Next]** to continue the installation process.
3. On the **[License Agreement]** screen, move the scroll bar on the right to the bottom, select **[I accept and agree to be bound by all the terms and conditions of this License Agreement]**, and click Next to continue the installation process.
4. On the Select **[Installation Type]** screen, select **[ALL]** and click **[Next]** to continue the installation process.

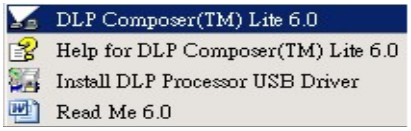
5. When the installation is finished, click [Finish] and reboot the PC. (A shortcut to DLP Composer (TM) Lite is created on the desktop.)



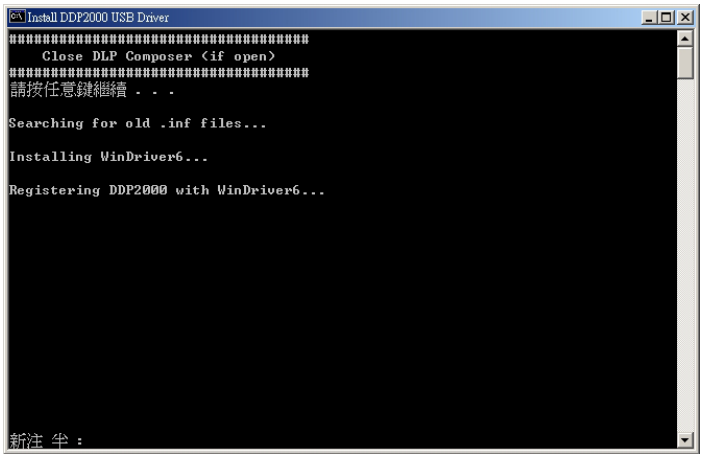

**And copy the file "FlashDeviceParameters.txt" into the C:\ Program Files\ DLP Composer Lite X.X**

## USB Support - Installation (All Platforms)

This release includes support for a USB communications interface to DDP2230-based projectors. The setup program includes the files needed to install USB support (for Windows 98/Me/2000/XP only -- Win95, WinNT and Windows Vista are not supported). After DLP Composer™ Lite is installed, to install the USB support, choose the "Install DLP Processor USB Driver" icon under "DLP Composer™ Lite" in your Start menu.



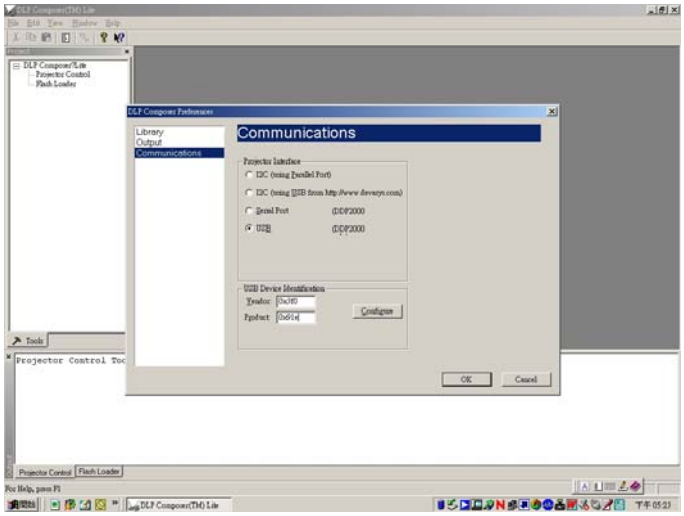

Follow the instruction on the screen to press any key and wait for the installation done.



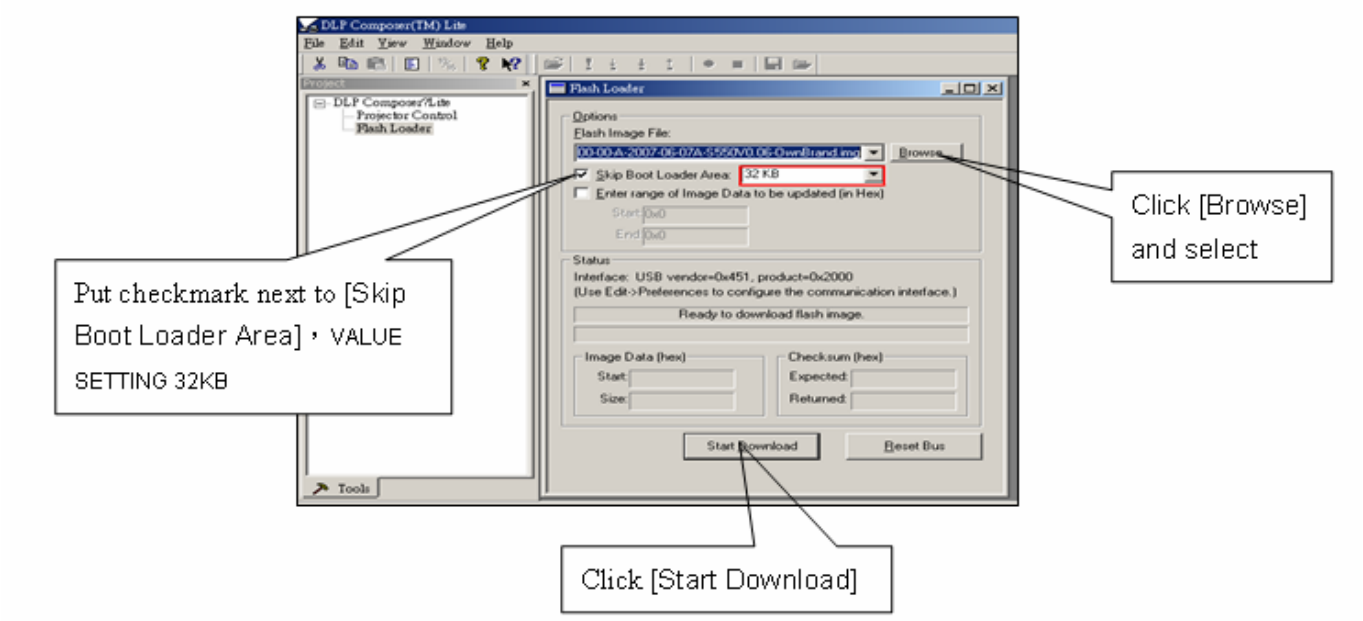

## Operating procedure

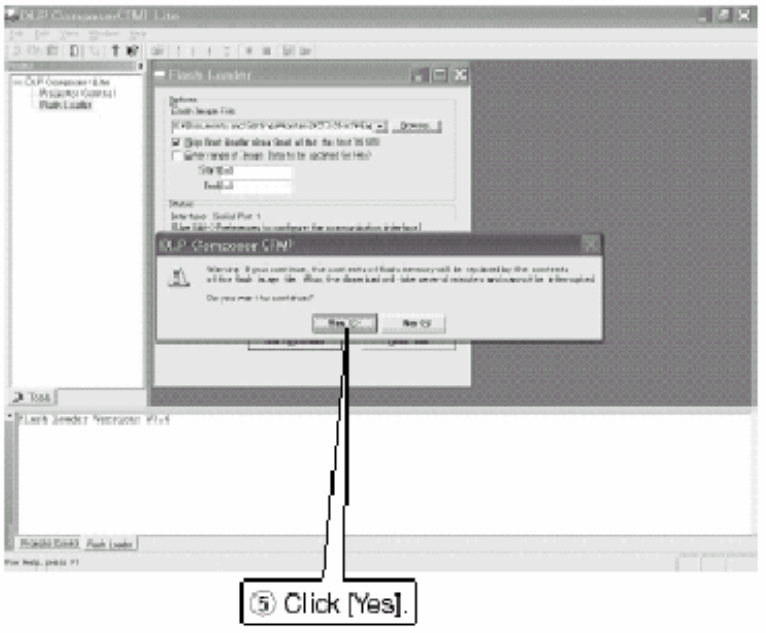
1. Connect the Projector and PC via USB cable.
2. Double-click **[DLP Composer (TM) Lite].** The following screen will appear.


3. Select **[Edit]/[Preferences]/[Communications]** to check **USB** in **[Projector Interface]**.



4. Click **[USB Device Identification].**
5. Set the items on the **[Vendor 0x451, Product 0x2000 ].**
6. Click **[OK]**
7. Move the cursor to **[Flash Loader]** on the Project window of **[DLP Composer Lite]**. (The **[Flash Loader]** screen will appear.)
8. Click **[Browse]** and select where the firmware **[xxxxxxxxx.img]** is for download.
9. Make sure **[Skip Boot Loader Area]** is with a check.
10. Press Menu and Power buttons constantly and then give power supply (switch power on). Power LED and Lamp LED will become amber. That indicates the projector is in the download mode. At this moment, you can release these two buttons.
11. Click **[Start Download]**. When the dialog box is displayed, click **[Yes]**.



12. Wait for the Completion of Burning and then remove Power Cord and Burning Cord

**Note:** In case, the device manager can't recognize the DDP2230 as blow, please disable this device. This will not affect upgrade procedure.

# 3 Machine Disassembly and Replacement

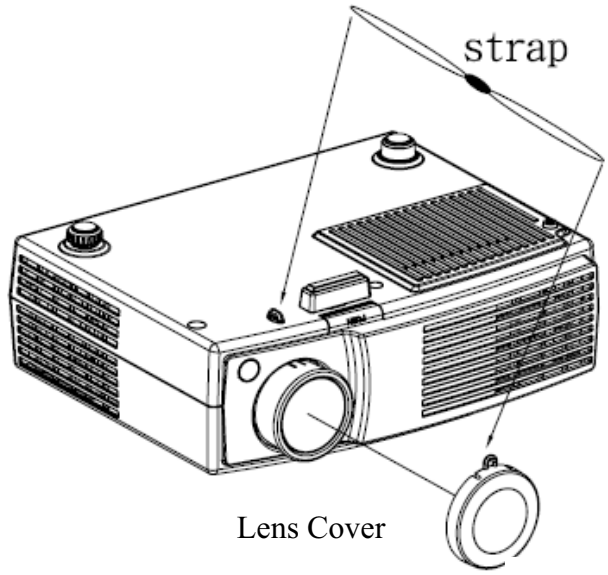
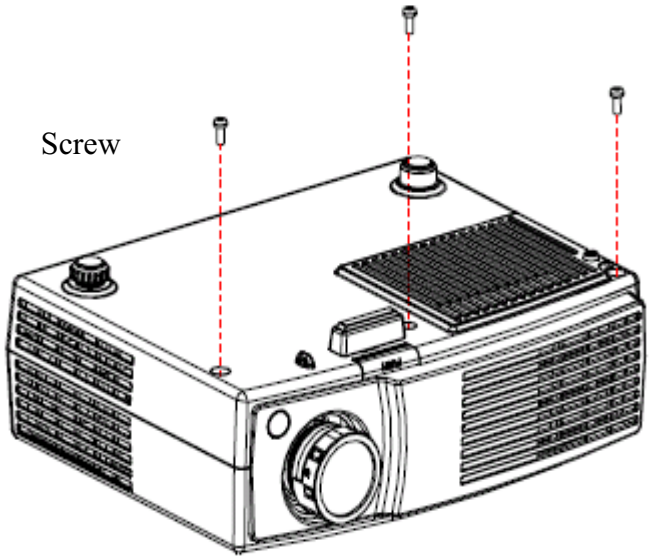
## 3.1 Tools

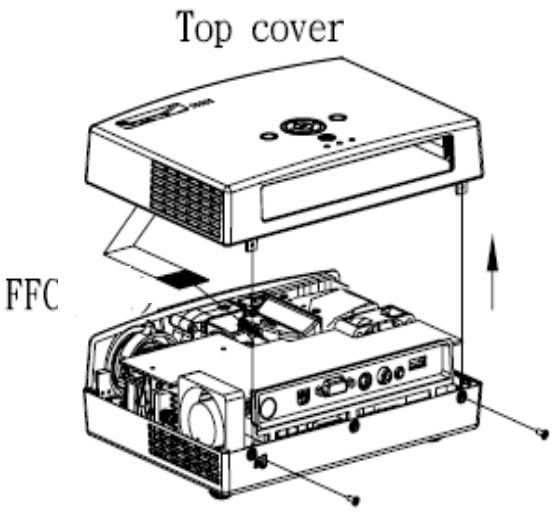
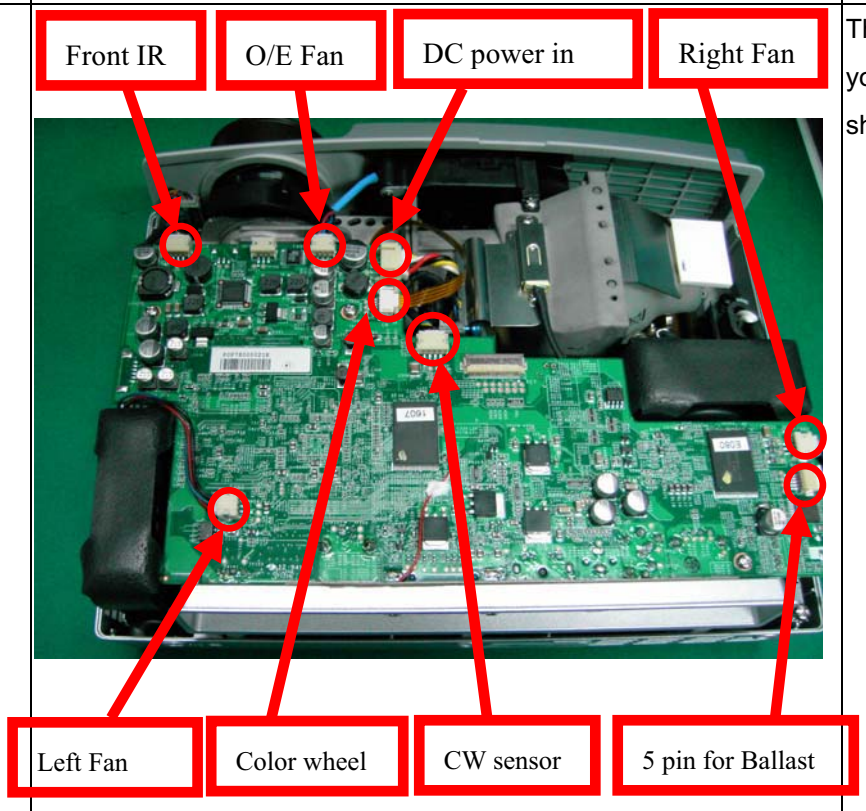
| Item | Photo |
|---|---|
| Long Nose Nipper |  |
| Hex Sleeves 5mm |  |
| Screw Bit(+):107<br>Screw Bit(+):101<br>Screw Bit(+):102 |  |
| Anti-static wrist strap |  |
| Anti-static wrist gloves |  |

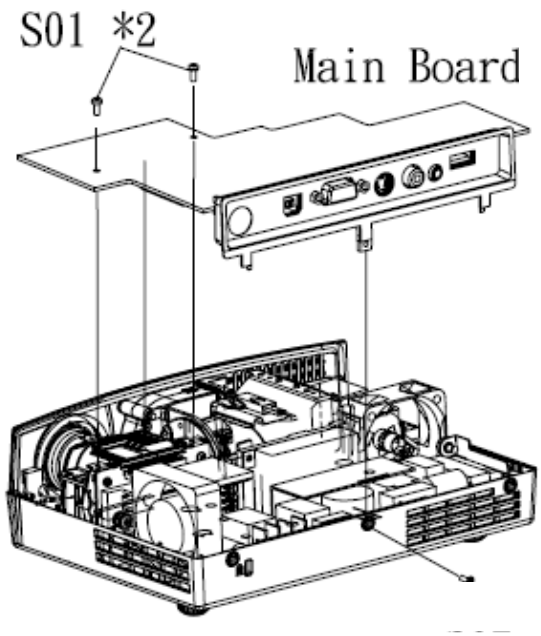
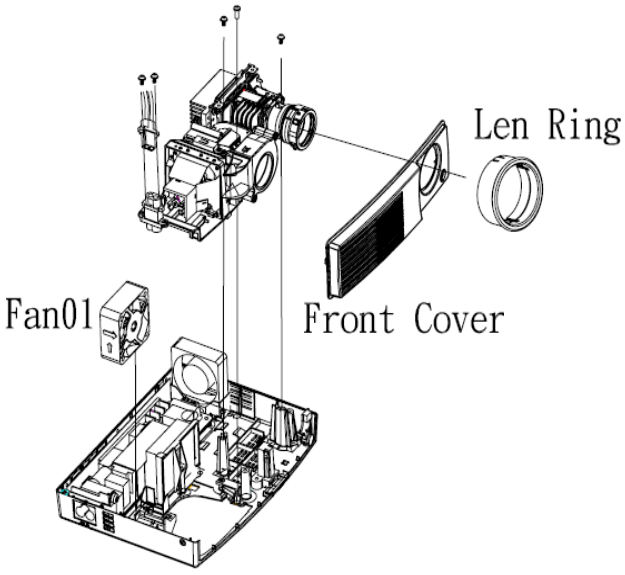
## 3.2 Disassembly Procedure

**Warning**

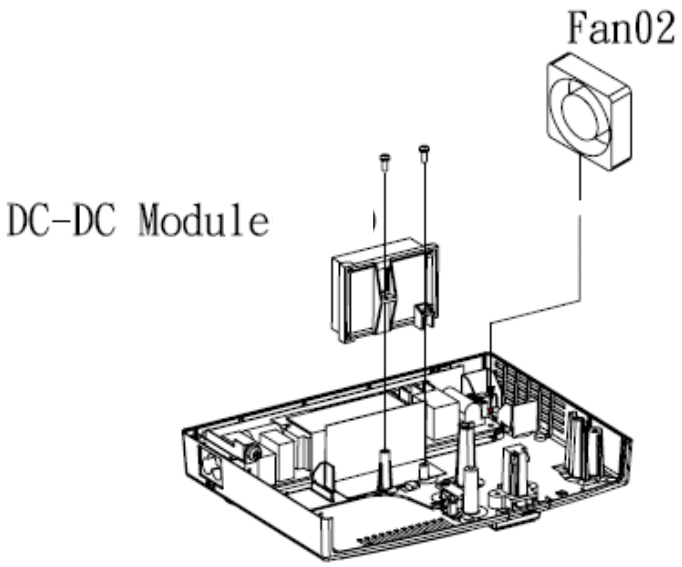
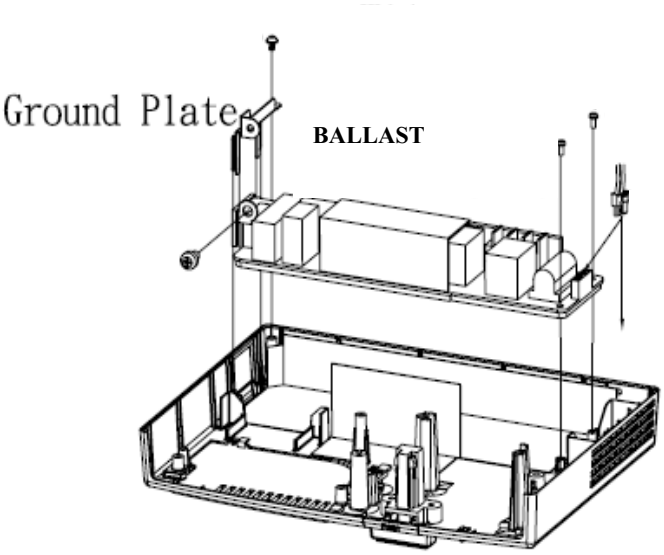
- Put on the Static Electricity Ring when starting for repair.
- Repair Environment suggest in Clean-room class 10000. Do not remove Optical Engine or DMD panel outside the clean room. Please return the optical engine to supplier if your repair condition can not meet the requirement.
- While screwing or unscrewing screws, please keep the screwdriver straight. Keeping screwdriver inclined will damage the screw holes.
- Please turn off the power before replacing any parts.
- Please wait for the projector lamp cooling down and turn off the power before changing it. Never touch or hit the lamp module when replacing the lamp.
- When you replace the projector lamp, never touch the new lamp with your bare hands. The invisible residue left by the oil on your hands may shorten the lamp life. Use lint-free gloves or finger cots are recommended.

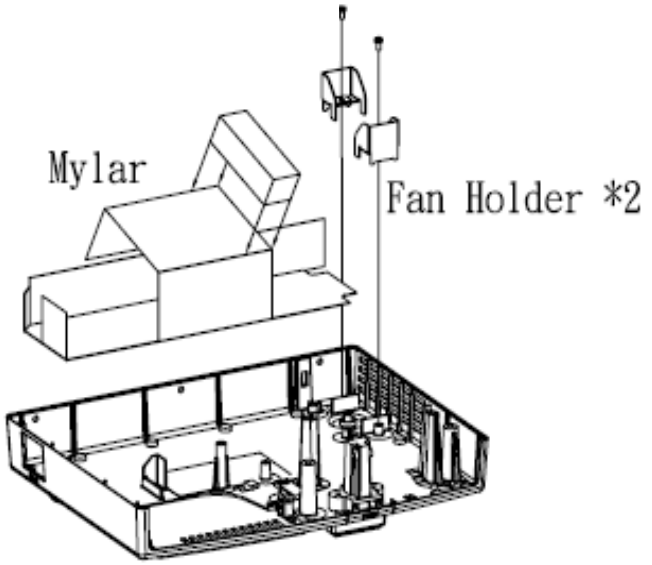
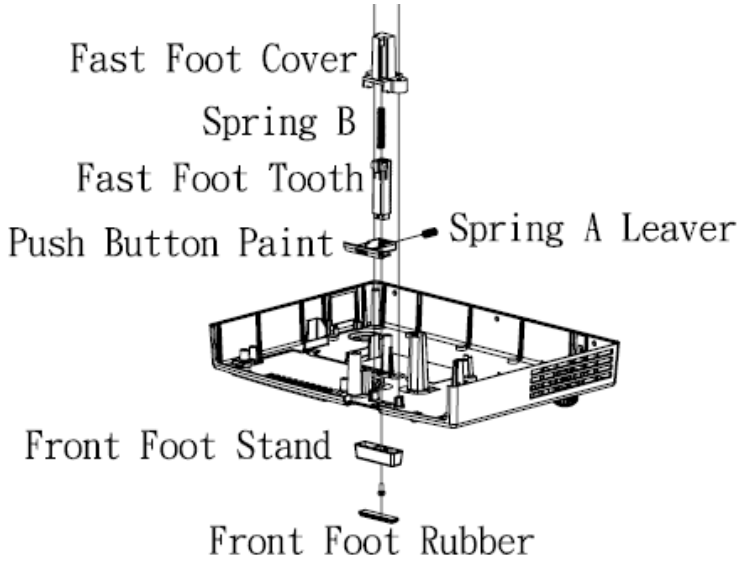
| Step | Figure | Description |
|---|---|---|
| 1 |  | Press the power button to shutdown the projector and disconnect the power cord.<br><br>If the lamp is hot, please do not start any procedure until the projector lamp cools down.<br><br>Flip the projector and remove the lens cover. |
| 2 |  | Flip the projector on the table.<br><br>Loosen the screws as shown. |

| Step | Figure | Description |
|---|---|---|
| 3 |  | Turn the projector over and remove the top cover (Be careful of the FPCB between keypad and main board). Then disconnect the flex wire (FFC).<br><br>Remove the screws on the back cover as shown.<br><br>Note: Screw-mylar can cover on the screws to decorate the back cover. |
| |  | There is a photo showing you what the connector should be. |

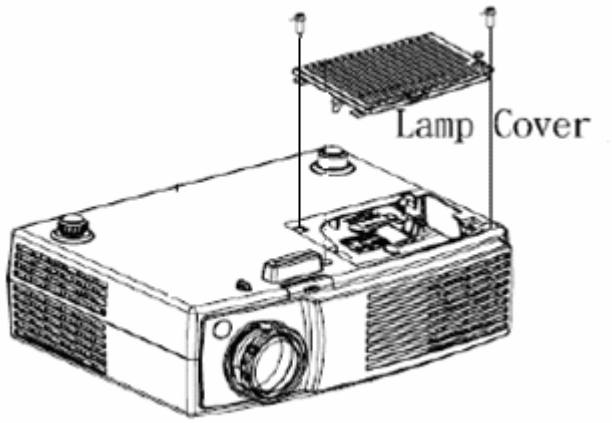
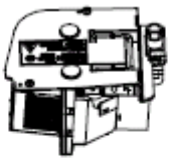
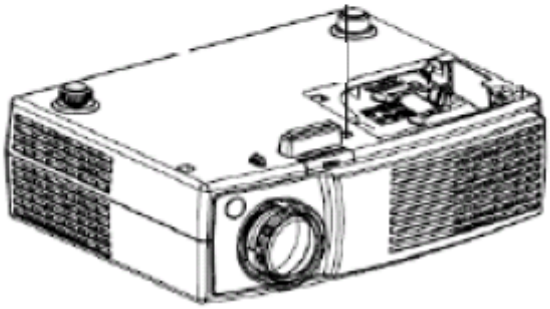
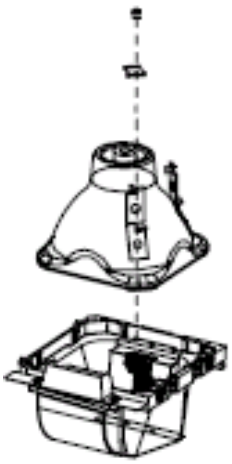
| Step | Figure | Description |
|---|---|---|
| 4 |  | Remove all the screws on the IO panel and main board. Then you can get the main board off.<br><br>Note: the leftest screws are different. |
| 5 |  | Spire off the lens ring and remove the screws on optical engine body, take off the engine and front cover. Then take the fans out. |

Screw

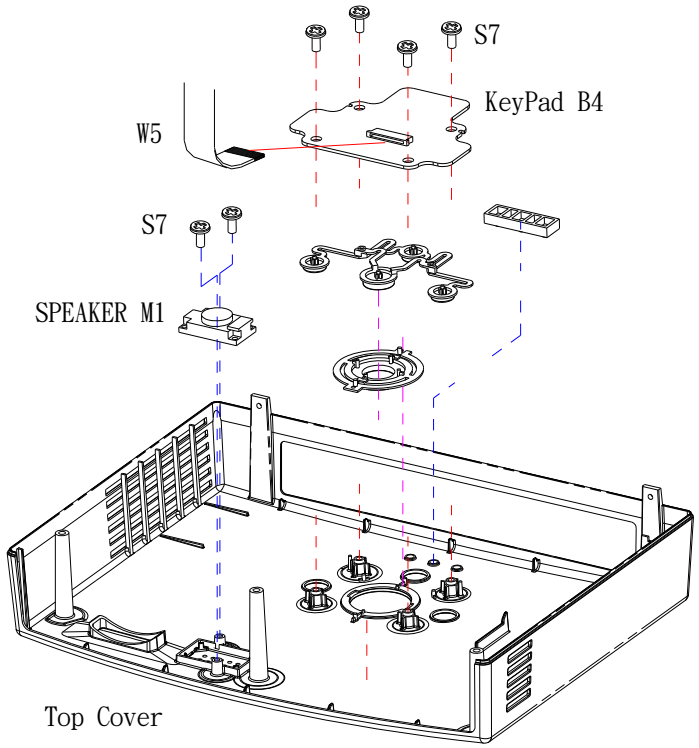
| Step | Figure | Description |
|---|---|---|
| 6 |  | Loosen the screws of the DC-DC module and take it out. |
| 7 |  | Remove the screws as shown and be careful to disconnect two wires under the ballast. Take the ballast off. |

| Step | Figure | Description |
|---|---|---|
| 8 |  | Remove the mylar and you age the bottom cover assembly. |
| 9 |  | Remove other assembly parts as photo showing. |

### 3.3 Disassembly Lamp Module

| Step | Figure | Description |
|---|---|---|
| 1 |  | ● Turn off the projector.<br>● Unplug the power cord.<br>● Remove the lamp cover. |
| 2 |  <br>  <br>  | ● Loosen the two screws of lamp module<br>● Pull the lamp module out by lamp handle.<br>● Insert the new lamp module into the projector and tighten the screws.<br>● Replace the lamp cover and tighten the screws.<br>Note: Turn on the projector. If the lamp does not turn on after the warm-up period, please reinstall the lamp. |

### 3.4 Disassembly the speaker and keypad

| Step | Figure | Description |
|---|---|---|
| 1 |  | **Disassembly the speaker**<br>● Disconnect the speaker wire with keypad<br>● Remove the screws S7 x 2<br>● Take the speaker M1 off.<br><br>**Disassembly the keypad**<br>● Disconnect the speaker wire and W5<br>● Remove the screws as shown<br>● Take the keypad B4 off. |

# 4 Troubleshooting and Verifying the Repair

This chapter provides technicians with electronic background how to maintain the product. Moreover, you can get the appropriate operation to solve some complicated problems of component repairing and professional problems.

## 4.1 Troubleshooting

Warning

- Do not directly look into the lens to avoid eyesight damages.
- The projector is equipped with ventilation holes (intake) and ventilation holes (exhaust). Do not block or place anything near these slots, or internal heat build-up may occur, causing picture degradation or damage to the projector.

**Confirm Software and hardware**

(1) Confirm FW version and lamp using hours(version and lamp hours in the help menu)

(2) Confirm LED indicator

| State/ Problems | Icon/ Messages | Close Messages | LED Indicators | |
|---|---|---|---|---|
| | | | TEMP | LAMP |
| Environment overheat |  | | On | |
| Fan lock |  | | | |
| System error |  | | F2 | F2 |
| Lamp life time | The lamp life is ending. | Press any key | | |
| Lamp error | | | | On |

F2: Flash 2Hz

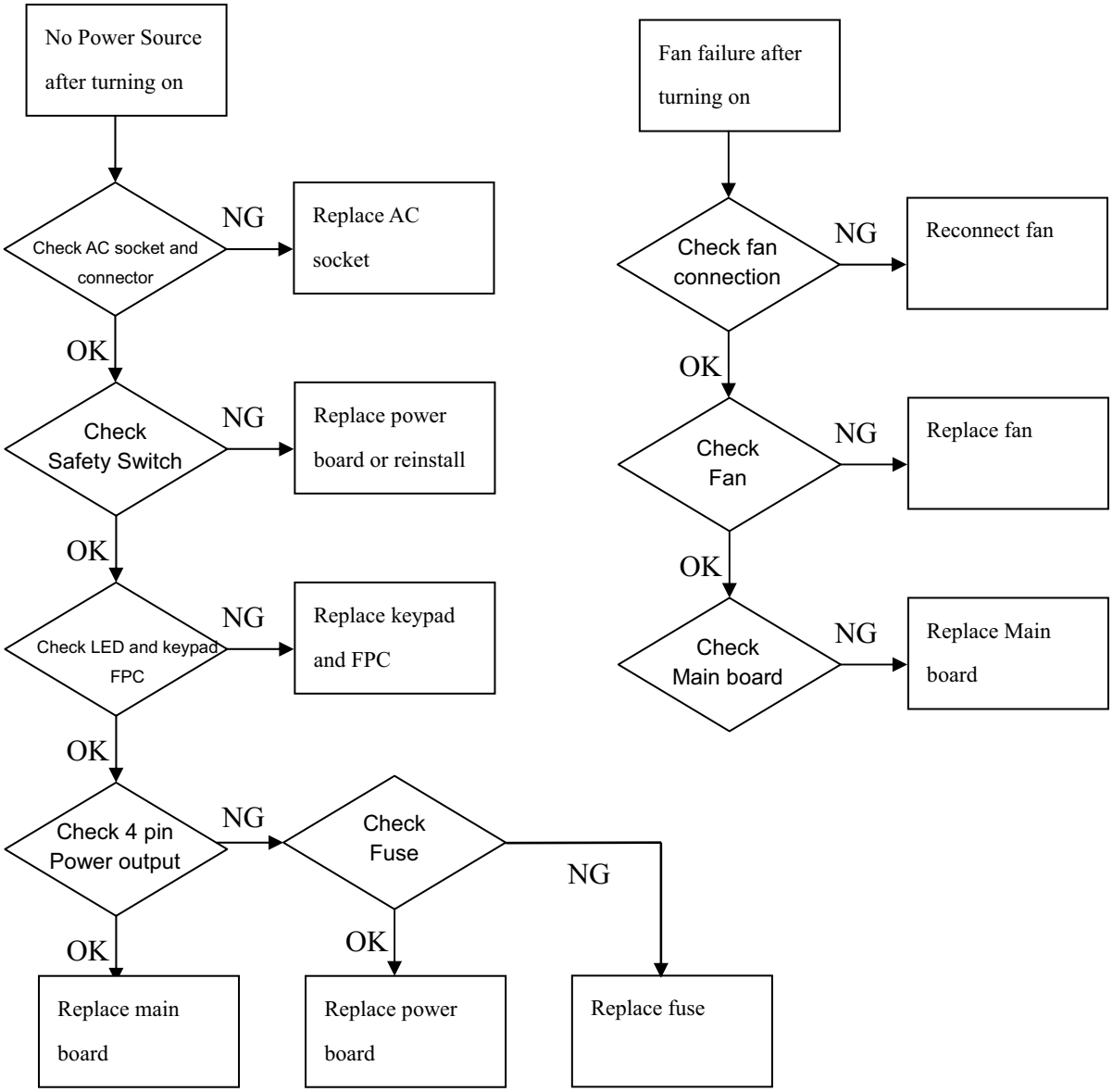
Flash 2Hz : Flash red light for each 0.5 sec.

(3) Confirm cable connection well.

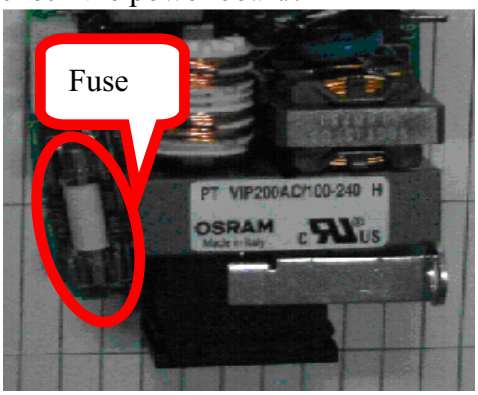
(4) Confirm Main-board version

**Note:** Swapping modules that may be defective with others known to be good is generally an ideal way to find the module responsible for the problem. A failure symptom is rarely caused by more than one module, so you will not usually need to replace more than one to correct a particular failure. Whatever main board, ballast, IR board, power board, lamp module or optical engine are all suitable to check by swapping modules.

## Power Source Troubleshooting:



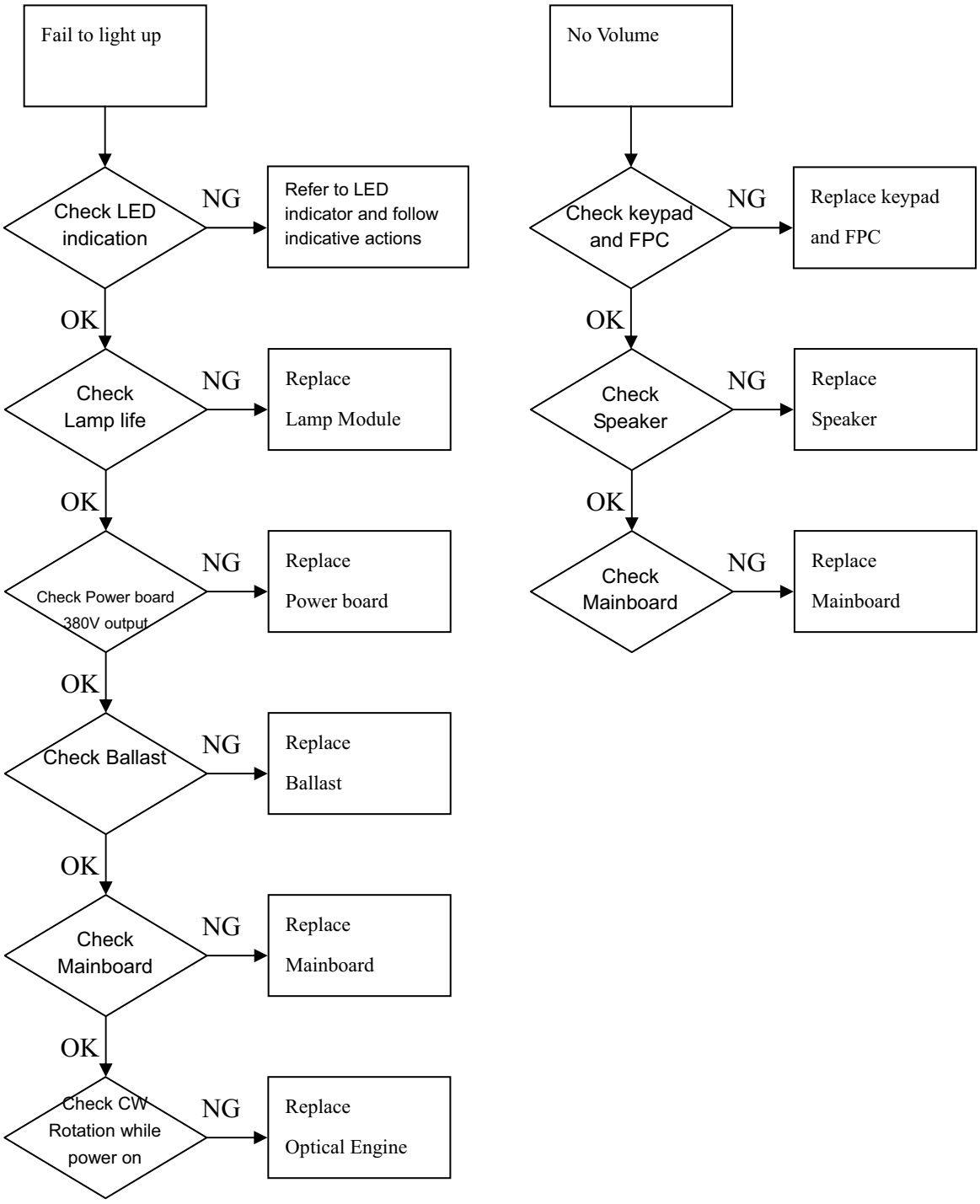

How to check the power board?



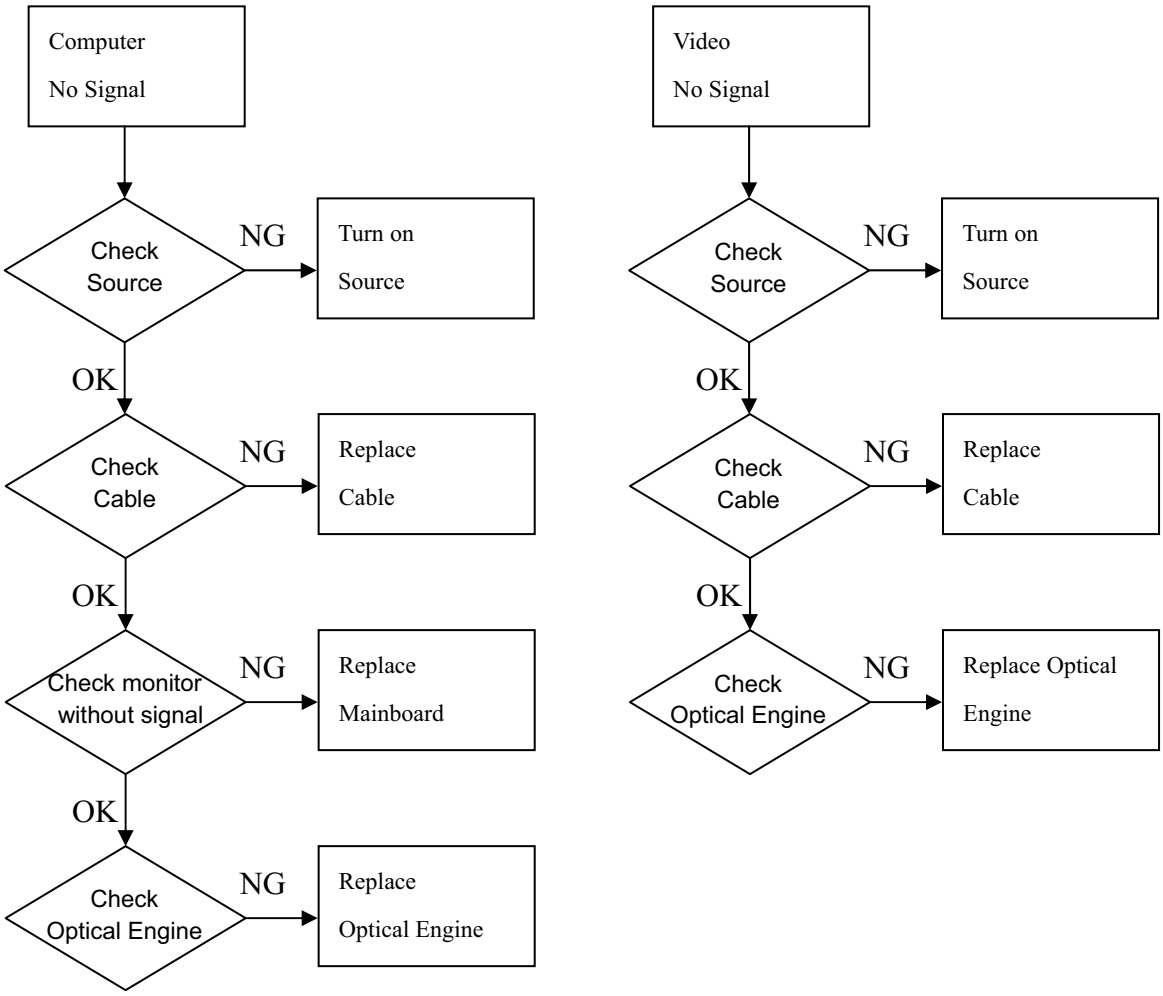

- check the 380v output on connector 1(see ballast board page 33)

- check the fuse on the power board

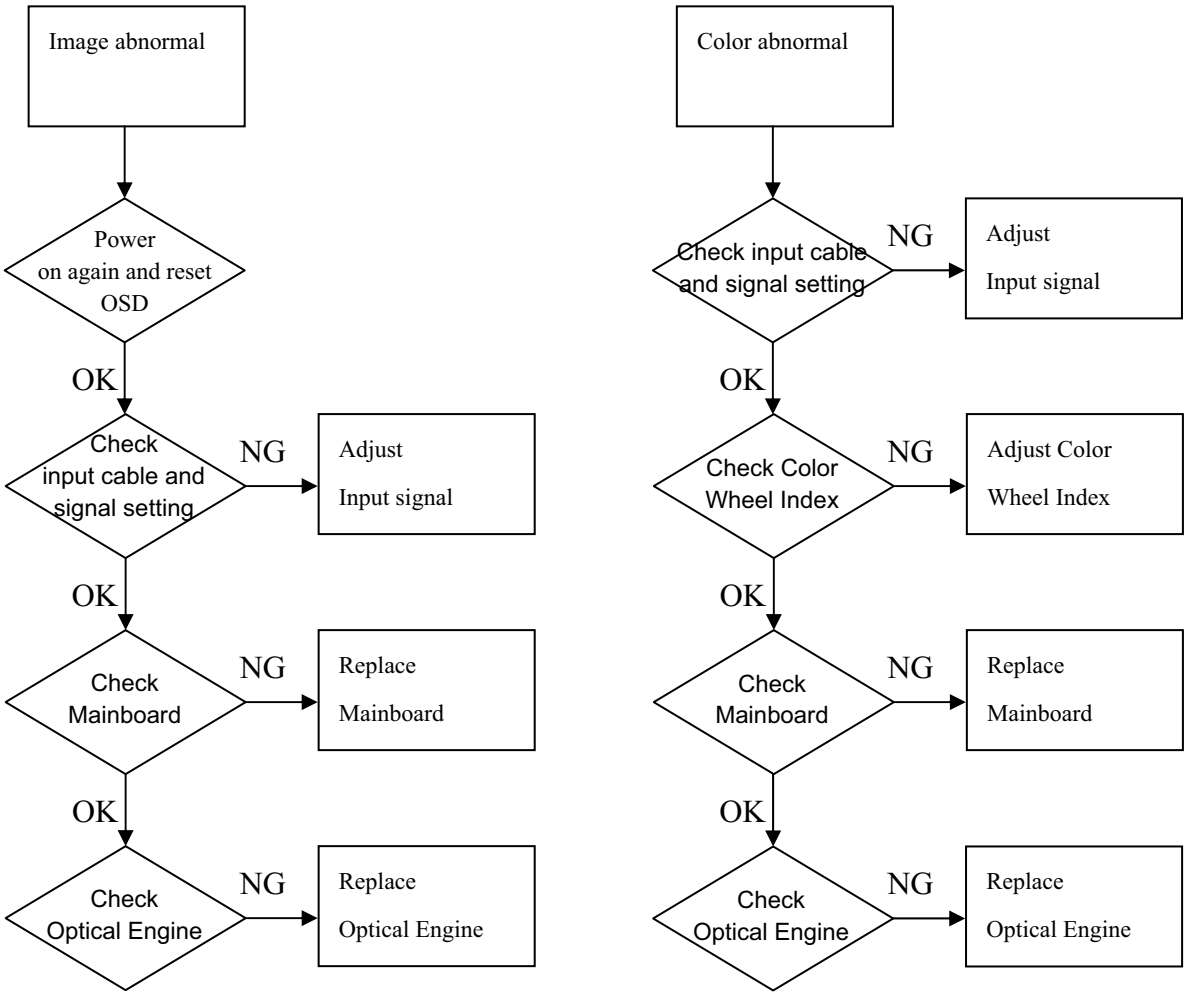
## Light and Sound Troubleshooting



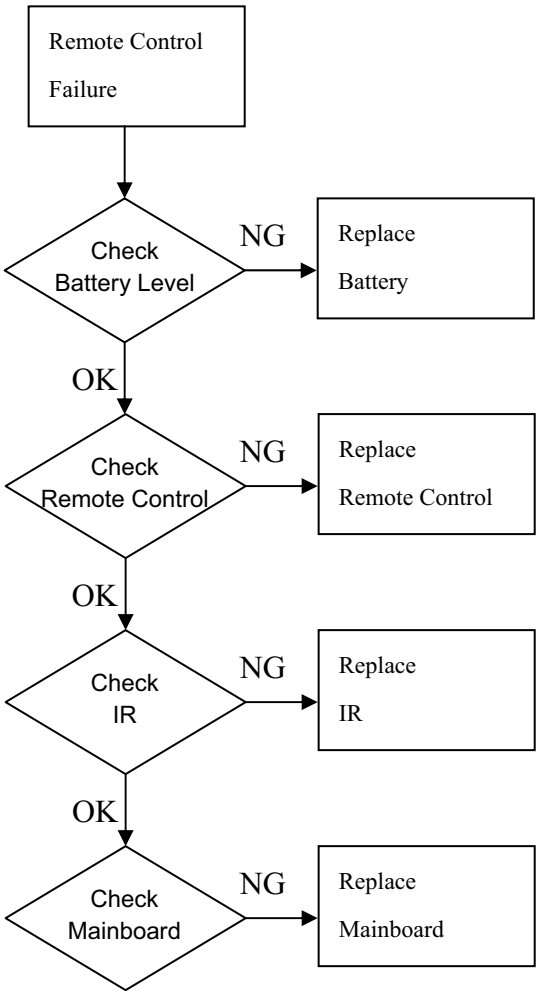
## Video Signal Troubleshooting

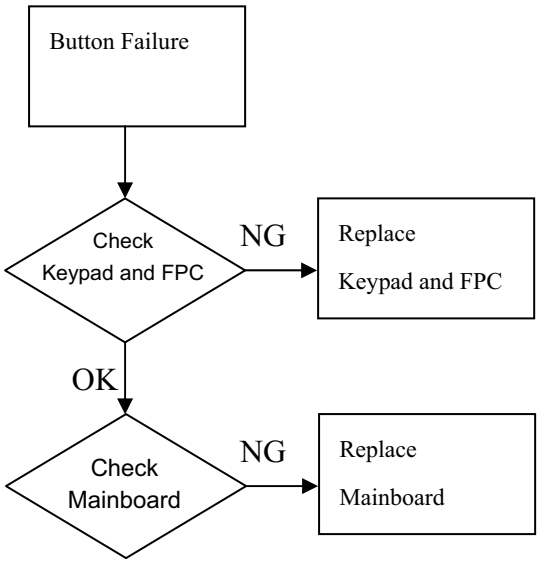


## Abnormal Image Troubleshooting



## Operation Function Troubleshooting



### 4.2 Verifying the Repair

After repairing projector (Dissembling and assembling projector), Repair center should verify the quality of repaired unit.

**(1) Signal test (Each I/O can function normally)**

Connect all connector to the jacks one after the other to check whether each channel can project normally

| **I/O port** | **Monitor In (VGA)** |
|---|---|
| **Test Equipment** | Standard Pattern generator (Ex. Quantum data) |
| **Signal format** | 1024*768 60Hz |

| **I/O port** | **Video** |
|---|---|
| **Test Equipment** | Standard Pattern generator (Ex. Quantum data) or DVD player |
| **Signal format** | NTSC |

| **I/O port** | **S-Video** |
|---|---|
| **Test Equipment** | Standard Pattern generator or DVD player |
| **Signal format** | 480i |

| **I/O port** | **USB** |
|---|---|
| **Test Equipment** | PC and Remote controller |
| **Test method** | 1. Connect PC (laptop) VGA output to projector.<br>Set PC (laptop) output signal to projector<br>2. Connect projector USB to PC.<br>Press remote controller page up/down to scroll presentation file up and down (ex Microsoft office series) |

| **I/O port** | **Audio input** |
|---|---|
| **Test Equipment** | Connect audio input to audio output of DVD player |
| **Signal format** | 480i |

### (2) Operation test

**Buttons operation**

| Button description | Test criteria |
|---|---|
| **Power button** | 1. Mechanical motion (Up & Down) should be free from getting stuck when pressing the button<br>2. Press “power” button and projector will switch on |
| **Menu/Enter** | 1. Mechanical motion (Up & Down) should be free from getting stuck when pressing the button.<br>2. Press Menu/Enter button can make projector function normally. |
| **4-way button (Keystone/Auto/Source)** | 1. Mechanical motion (Up & Down) should be free from getting stuck when pressing the 4-way button.<br>2. Press Menu/Enter button can make projector function normally. |

**Foot adjuster operation**

| Foot adjuster. | Test criteria |
|---|---|
| **Foot adjuster button** | Foot adjusters should stretch downward smoothly by pressing the foot adjuster buttons on the two sides |

**Zoom ring and Focus ring**

| Ring | Test criteria |
|---|---|
| **Zoom ring** | Mechanical motion of rotating Zoom ring to the end of right and left by hand should be free from getting stuck. |
| **Focus ring** | The feeling of rotating Focus ring to the end of right and left by hand should free from seizing |

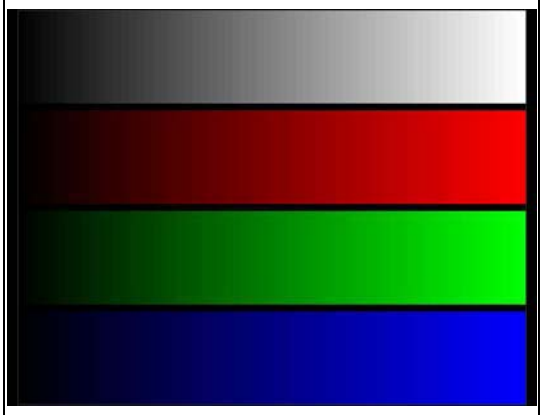
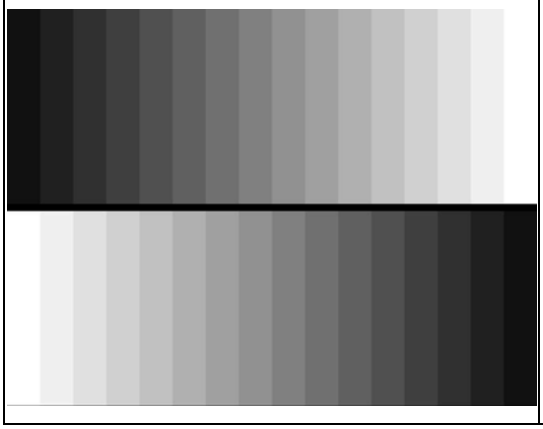
**(3) Image Quality**

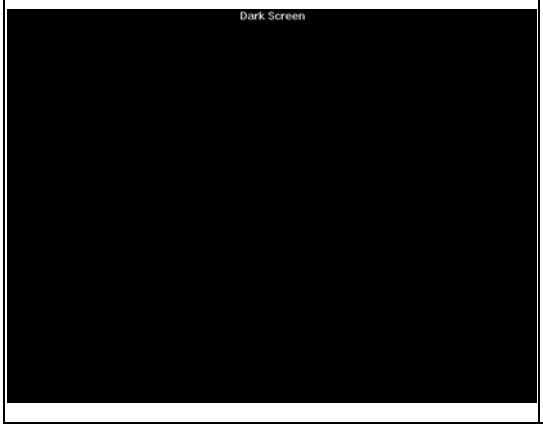
Projected image size: 60 inches (diagonal length)

Zoom ring: Adjust zoom ring to wide (Maximum projection size)

**VGA**

| | |
|---|---|
| **I/O port** | Monitor In (VGA) |
| **Test Equipment** | Standard Pattern generator (Ex. Quantum data) |
| **Signal format** | 1024*768 60Hz |
| **Projected image size** | 60” in diagonal length |

| Test Pattern | Test criteria |
|---|---|
| | **Full white**<br>Apparent color strip, bend and streak corner on the projected image are not allowable |
|  | **256 level RGB**<br>--256 level of RGB color should be distinguishable, at least Red color scales should be.<br>-- For each RGB 256 levels, Noise or color deviation in R, G, and B single level respectively are acceptable. |
|  | **16 gray level**<br>--16 level of gray level color should be distinguishable<br>--When Gamma selected to “RGB”<br>Not distinguishable of 2 brightest levels /2 darkest levels are acceptable. |

| | |
|---|---|
| | **Gray 10**<br>Blemish, stain are not allowable on the projected screen |
|  | **Full darkness**<br>Light leak in the non-effective area.<br>Should be less than 0.7 lux(<0.7lux) |

**S-Video**

| | |
|---|---|
| **I/O port** | S-Video |
| **Test Equipment** | Standard Pattern generator (Ex. Quantum data)&DVD player |
| **Signal format** | 480i |
| **Criteria** | No apparent color deviation on the projected image |

**Video**

| | |
|---|---|
| **I/O port** | Video |
| **Test Equipment** | Standard Pattern generator (Ex. Quantum data)&DVD player |
| **Criteria** | No apparent color deviation on the projected image |

### (4) Resolution

| | |
|---|---|
| **I/O port** | VGA |
| **Test Equipment** | PC |
| **Test Method** | 1. Rotate Zoom ring to wide mode (Maximum projected image)<br>2. Fix projector to set diagonal length of projected image to 60”.<br>3. Adjust focus ring to make resolution of 4 corners and center are balanced.<br>4. Check he characters should be recognized easily.<br>5. Rotate Zoom ring to tele mode (Minimum projected image)<br>6. Adjust focus ring to make resolution of 4 corners and center are balanced.<br>7. Check the characters should be recognized easily. |

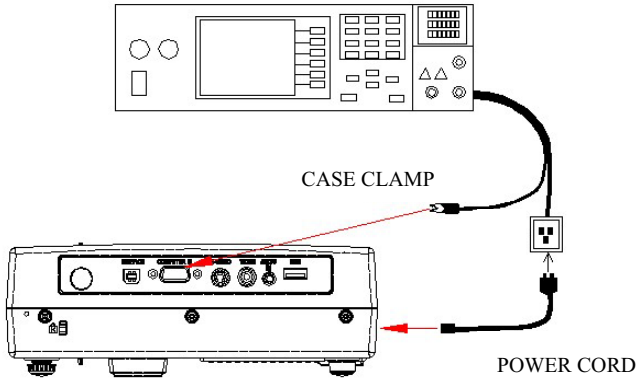
### (5) Front and Rear infrared sensor

| | |
|---|---|
| **Device** | Front and Rear infrared |
| **Test Equipment** | Remote controller |
| **Test method** | 1. Cover front sensor and operate remote controller to test rear sensor<br>2. Cover rear sensor and operate remote controller to test front sensor |

### (6) Brightness measurements

| | |
|---|---|
| **Test items** | Brightness measurements |
| **Test Equipment** | Chroma automatic system (The alternative is CL-200) |
| **Test method** | Measure 9 points |
| **Criteria** | Marketing spec 20% off |

### (7) Safety test equipments

| | |
|---|---|
| **Test items** | Safety test |
| **Test Equipment** | Safety analyzer |
| **Test method** | 1. Clamp the metal shell of VGA connector<br>2. Plug the power cord to socket<br>  <br> |
| **Test criteria** | GND 30A 3sec 100mΩ<br>DCW 2506V 1sec 250uA<br>Single Step OFF |

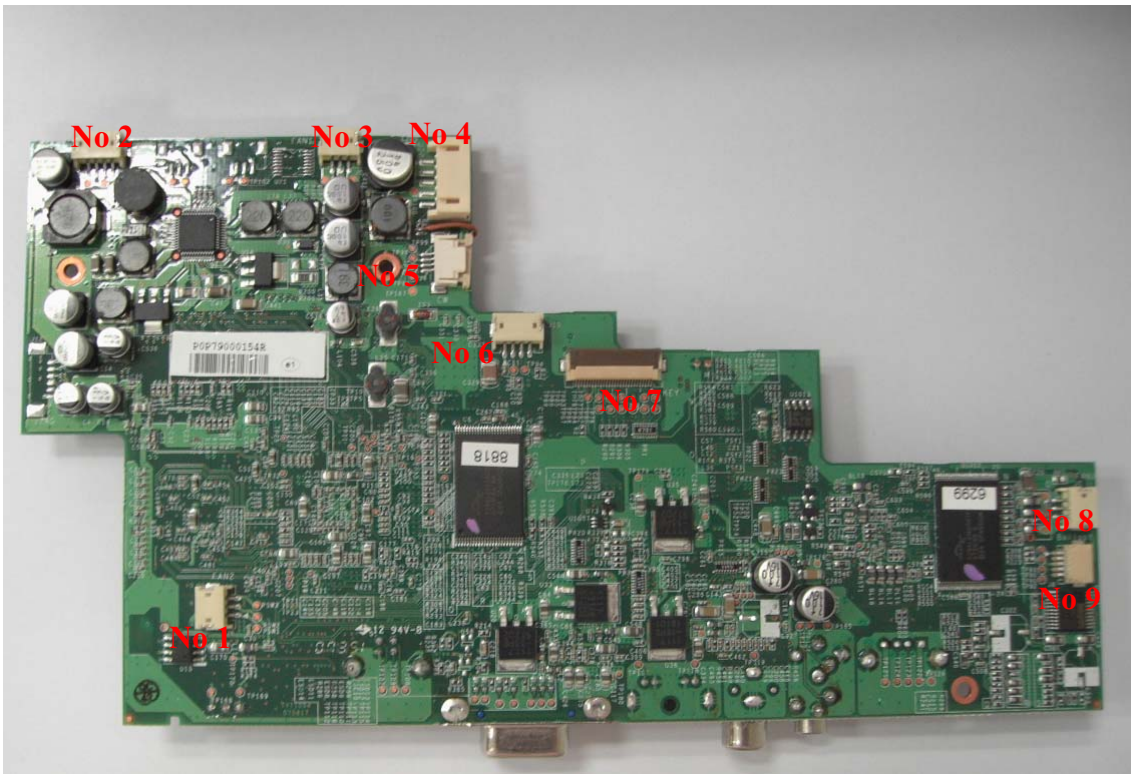
### (8) Cosmetic standard for repaired projector

Follow cosmetic standard of repair center.

# 5 Connector Information

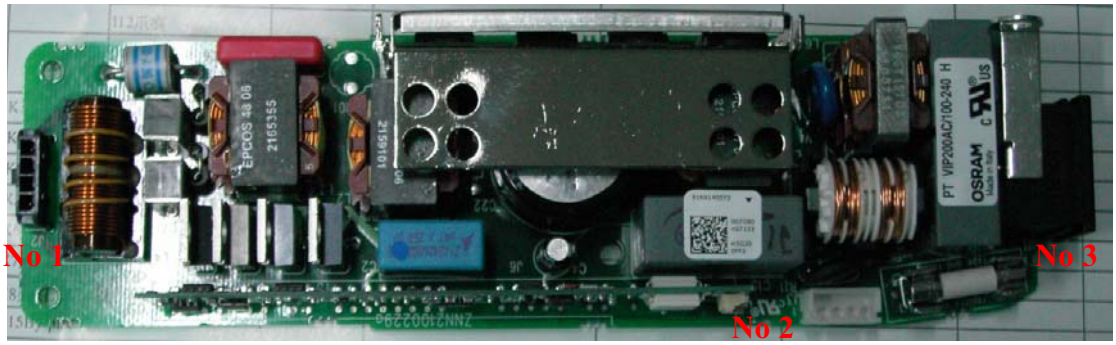
This section provides each connector location on boards and function of each board. They will be useful for your detecting the defective boards.

## 5.1 Main Board



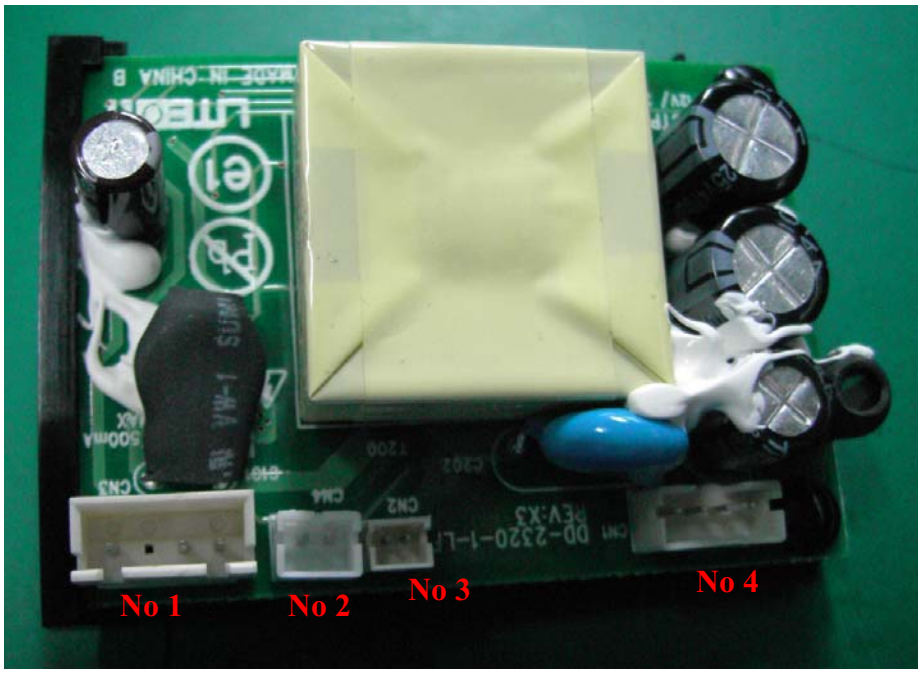

| Connector | Description |
|---|---|
| No 1 | Left FAN |
| No 2 | Front IR |
| No 3 | O/E FAN |
| No 4 | Power supply |
| No 5 | Color Wheel control |
| No 6 | Color Wheel Sensor |
| No 7 | Keypad control |
| No 8 | Right FAN |
| No 9 | Ballast control |

## 5.2 Ballast Board




| Connector | Description |
|---|---|
| No 1 | Lamp power supply |
| No 2 | Connect to DC-DC board |
| No 3 | AC Power Input |

## 5.3 DC-DC Power board




| Connector | Description |
|---|---|
| No 1 | Connect to main board |
| No 2 | Thermal feedback |
| No 3 | Safety switch |
| No 4 | DC power in |

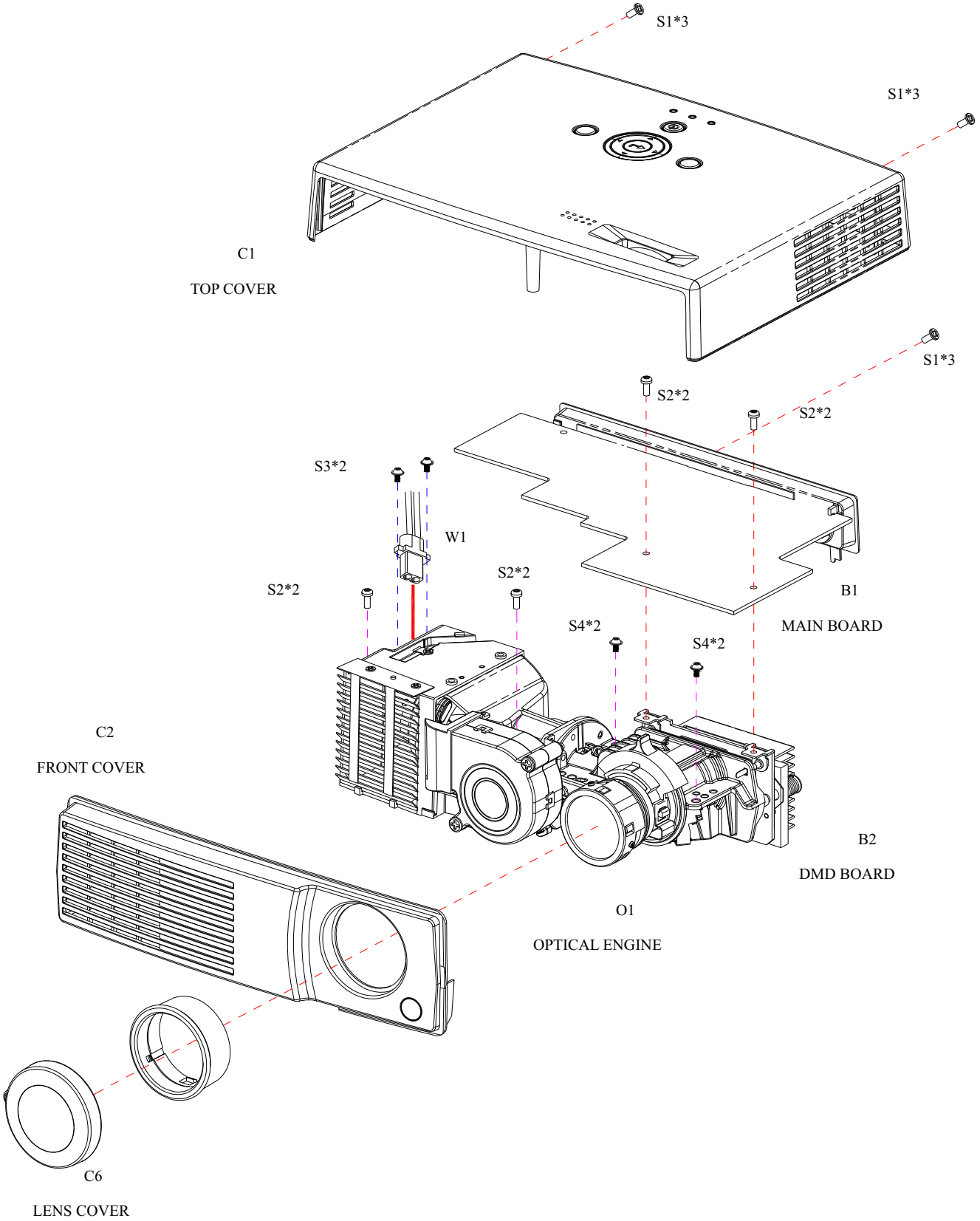
# 6 FRU (Field Replaceable Unit) List

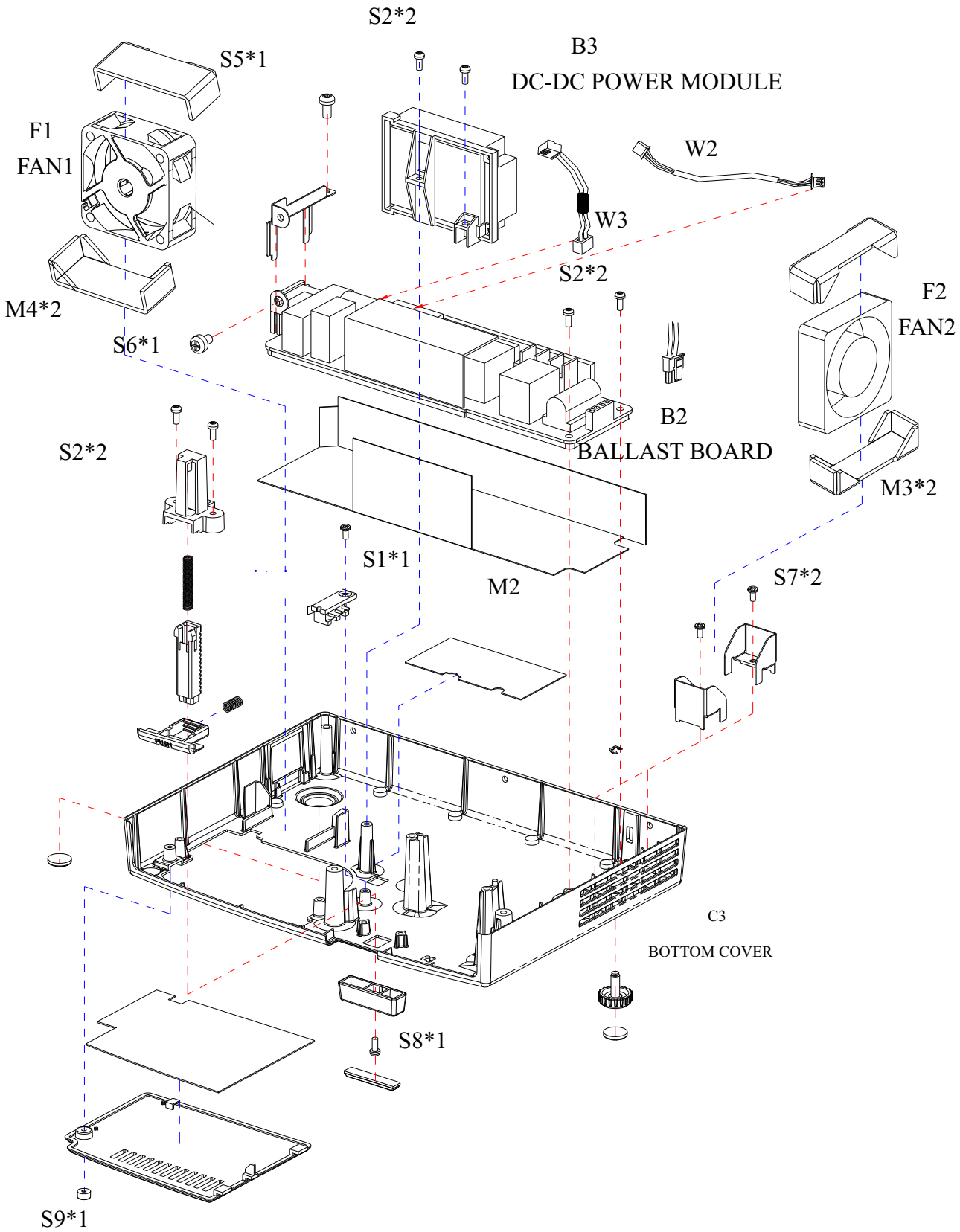
## Introduction

This section is a list of all the FRU removal. Following the FRU table of contents is an enlarged view of the entire projector, which shows the primary FRUs in the projector.

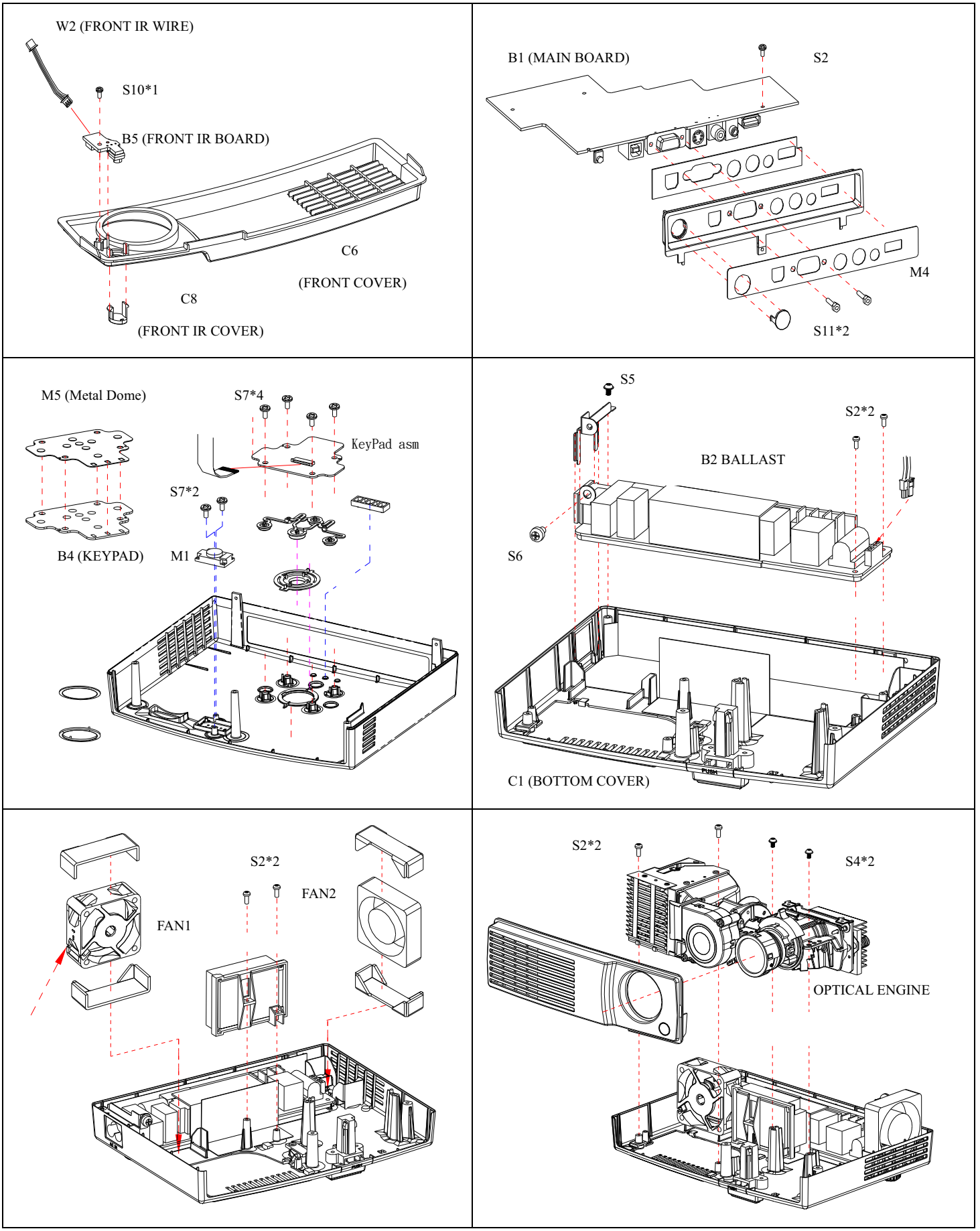
When working on the projector, use appropriate anti-static precautions such as anti-static mats, wrist straps and grounded work surfaces. Failure to do this can destroy static-sensitive components and make the product inoperable.

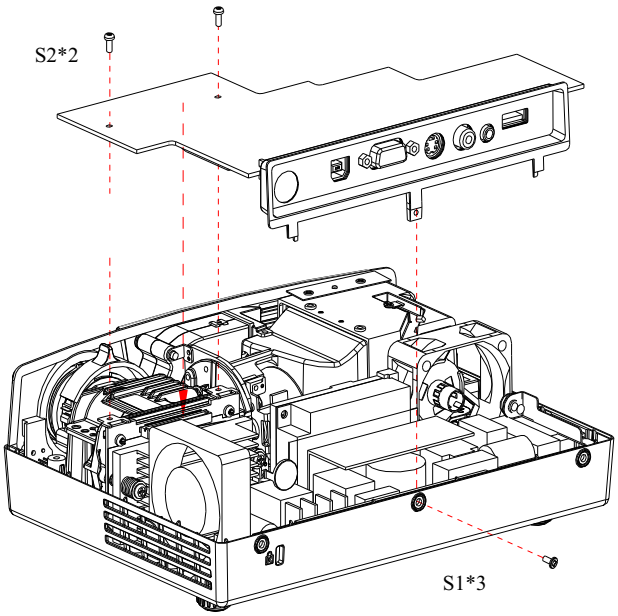
## 6.1 Mechanical Drawing



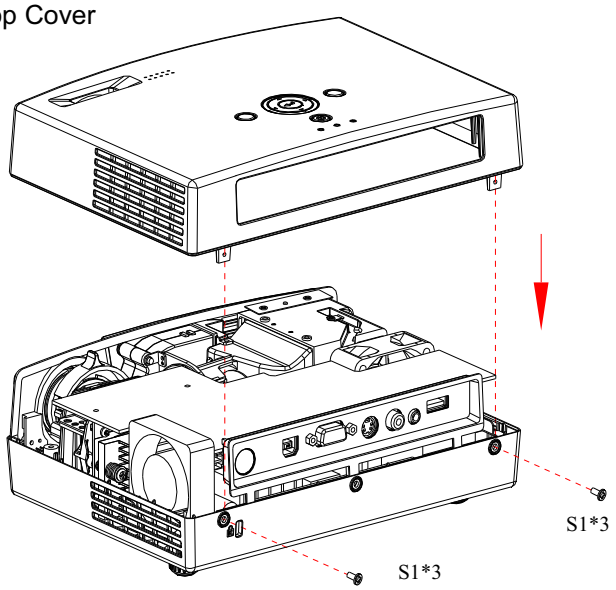

S2*2
B3
DC-DC POWER MODULE
S5*1
F1
FAN1
W2
W3
S2*2
F2
FAN2
M4*2
S6*1
B2
BALLAST BOARD
S2*2
M3*2
S1*1
M2
S7*2
C3
BOTTOM COVER
S8*1
S9*1
C4
LAMP COVER

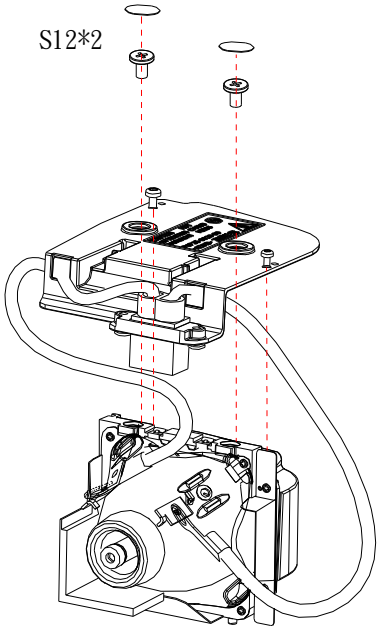
## 6.2 Other drawing



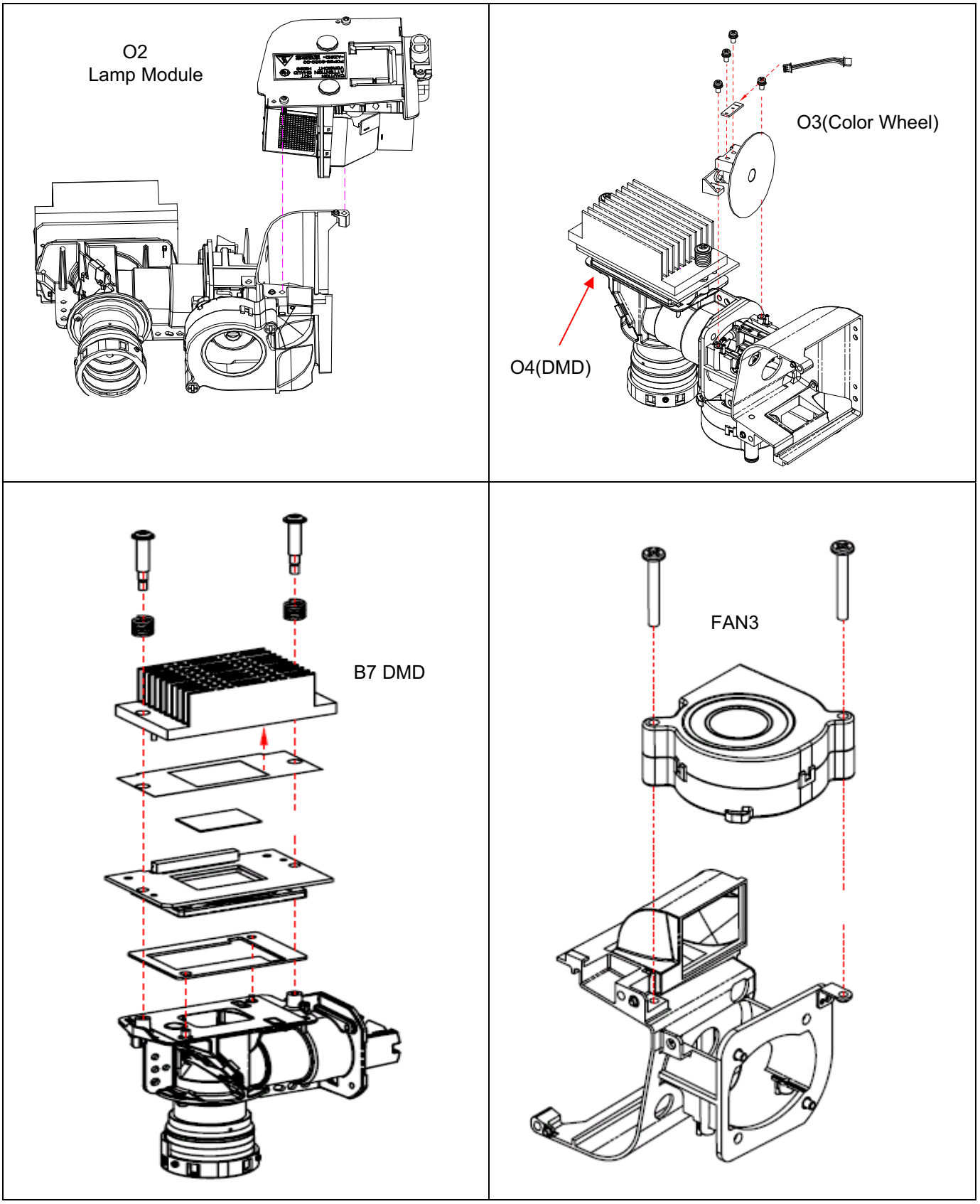


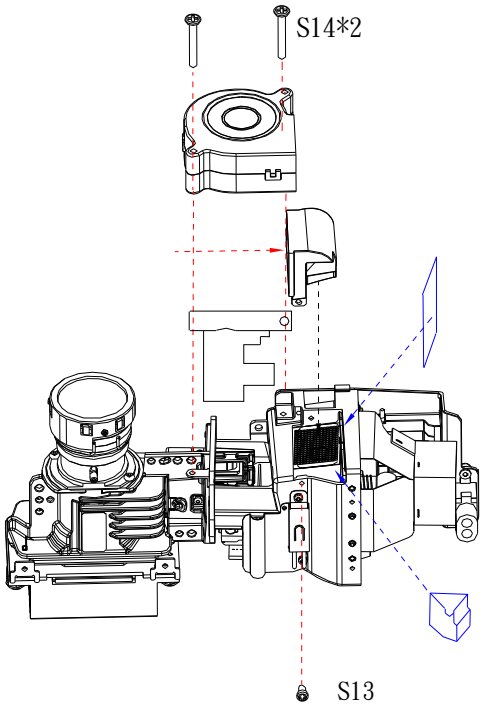

Top Cover

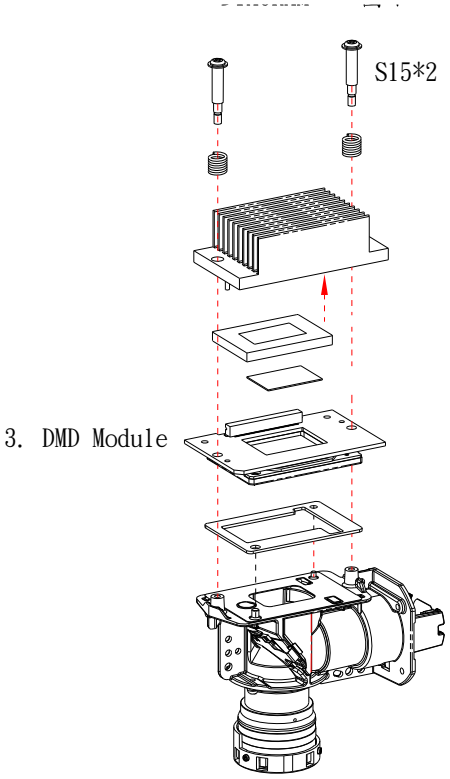


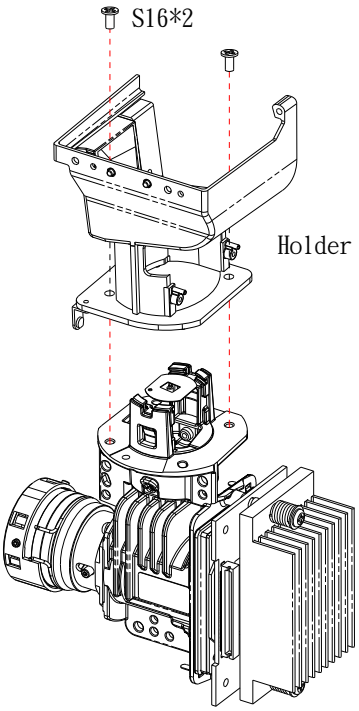



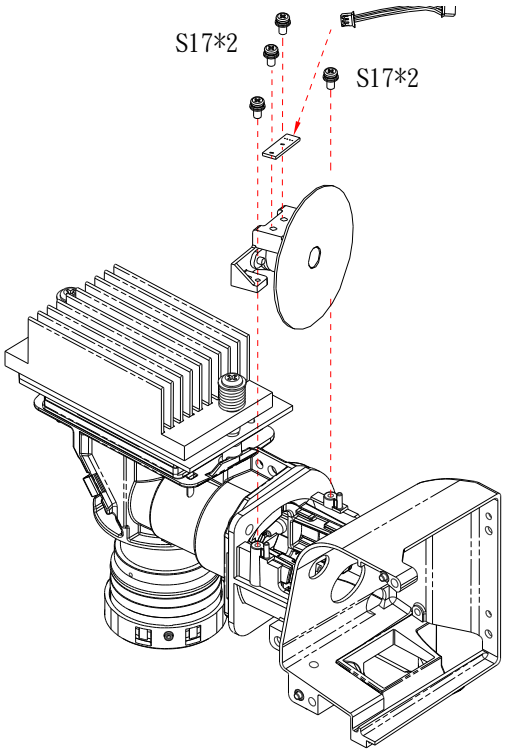
6.3 Drawings of Optical Engine




S14*2
S13


S15*2
3. DMD Module


S16*2
Holder


S17*2
S17*2

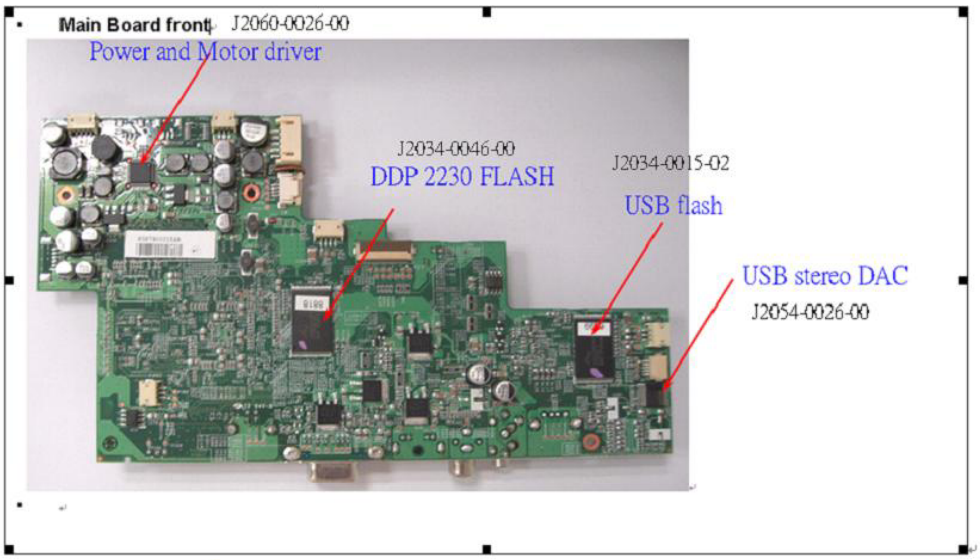
## 6.4 Spare parts list (TDP-P9, TDP-PX10) GREEN

| No | Loca-tion | Description | Part No | |
|---|---|---|---|---|
| | | | P9 | PX10 |
| 1 | - | SCREW, M2*4*A1.3 B | 75010614 | |
| 2 | - | SCREW, M2.5*4*E0.7 NI | 75010615 | |
| 3 | - | SCREW, M2.5*6*A1.7 NI | 75010616 | |
| 4 | - | SCREW, M3*6*A2 NI | 75010619 | |
| 5 | - | SCREW, M3*26*D2 NI | 75010621 | |
| 6 | - | SCREW, M3*23*E1.2 BL | 75010622 | |
| 7 | A1 | CASE, SOFT | 75010656 | |
| 8 | A2 | CARTON | 75010658 | |
| 9 | A3 | PAD, CARTON | 75010660 | |
| 10 | A4 | LABEL, LAMP | 75010653 | |
| 11 | A5 | LABEL, LENS | 75010654 | |
| 12 | A6 | LABEL, LAMP BURSTING | ----- | 75010682 |
| 13 | A7 | PAD | 75010659 | |
| 14 | A8 | LABEL, RATING | ----- | 75010681 |
| 15 | A9 | LABEL, WARNING | 75010652 | |
| 16 | A10 | MANUAL, QUICK GUIDE, P9, VER2 | 75011045 | |
| 17 | A11 | LABEL, HOT WARNING | 75010655 | |
| 18 | A12 | STRAP, LENS CAP | 75010677 | |
| 19 | A13 | CABLE, RGB | 75010629 | |
| 20 | A14 | CORD, POWER, US | 75010627 | |
| 21 | A15 | CORD, POWER, EU | 75010626 | ----- |
| 22 | A17 | CORD, POWER, UK | 75010628 | ----- |
| 23 | A19 | USERS MANUAL, CD-ROM, P9, VER2 | 75011046 | ----- |
| 24 | A20 | USER'S MANUAL, CD-ROM, PX10, VER2 | ----- | 75011147 |
| 25 | A21 | CORD, POWER, CHINA | 75011044 | ----- |
| 26 | B1 | PC BOARD ASSY, MAIN, P9 | 75010670 | |
| 27 | B2 | PC BOARD ASSY, BALLAST | 75010680 | |
| 28 | B3 | PC BOARD ASSY, MAIN POWER | 75010671 | |
| 29 | B4 | KEYPAD | 75010664 | |
| 30 | B5 | PC BOARD ASSY, IR | 75010665 | |
| 31 | B6 | PC BOARD ASSY, PHOTO SENSOR | 75010679 | |
| 32 | B7 | PC BOARD ASSY, DMD | 75010666 | |
| 33 | C1 | COVER, TOP, P9 | 75010667 | |
| 34 | C2 | COVER, FRONT, P9 | 75010669 | ----- |
| 35 | C2 | COVER, FRONT, PX10 | ----- | 75010684 |
| 36 | C3 | COVER, BOTTOM | 75010668 | |
| 37 | C4 | COVER, LAMP | 75010641 | |
| 38 | C5 | COVER, LENS | 75010645 | |
| 39 | C7 | PLATE, DECORATION CIRCLE | 75010639 | |
| 40 | C8 | COVER, IR, FRONT | 75010642 | |
| 41 | C9 | FOOT ASSY, FRONT | 75010663 | |
| 42 | C10 | FOOT ASSY, REAR | 75010810 | |
| 43 | C11 | COVER, IO | 75010673 | |
| 44 | C12 | COVER, IR, REAR | 75010678 | |
| 45 | F1 | FAN, AFB0512VHD-7F49 | 75010676 | |
| 46 | F2 | FAN, AUB0512HHB-7G27 | 75010675 | |
| 47 | F3 | FAN, BUB04512MD | 75010624 | |
| 48 | M1 | SPEAKER | 75010625 | |
| 49 | M2 | MYLAR, BALLAST | 75010649 | |
| 50 | M3 | SPONGE FAN5015 | 75010651 | |

| No | Loca-tion | Description | Part No | |
|---|---|---|---|---|
| | | | P9 | PX10 |
| 51 | M5 | DOME, METAL | 75010647 | |
| 52 | M6 | HOLDER, FAN5015 | 75010646 | |
| 53 | M7 | GASKET, SHIELDING FOAM | 75010650 | |
| 54 | M8 | MYLAR, IO DECORATION | 75010644 | |
| 55 | M9 | SWITCH, THERMAL | 75010633 | |
| 56 | M10 | SWITCH, LAMP COVER | 75010674 | |
| 57 | M11 | SHEET, TOP | 75010648 | |
| 58 | M12 | FOOT, RUBBER | 75010643 | |
| 59 | O1 | OPTICS BLOCK | 75010672 | |
| 60 | O3 | COLOR WHEEL ASSY | 75010662 | |
| 61 | O4 | DMD | 75010638 | |
| 62 | O5 | RING, ZOOM | 75010640 | |
| 63 | RC | REMOCON HAND UNIT | 75010637 | |
| 64 | S2 | SCREW, M2.5*6*A1.9 NI | 75010612 | |
| 65 | S5 | SCREW, M3*6*A2 NI | 75010620 | |
| 66 | S6 | SCREW, M4*6*A2.6 NI | 75010623 | |
| 67 | S7 | SCREW, M2.5*4*E0.8 NI | 75010617 | |
| 68 | S8 | SCREW, 2.6*5*A1.6 NI | 75010613 | |
| 69 | S9 | SCREW, M2.5*8*A1.9 NI | 75010618 | |
| 70 | W1 | WIRE, CON-CON 2PIN BST(BST-LAMP) | 75010632 | |
| 71 | W2 | WIRE, CON-CON 4PIN IR | 75010631 | |
| 72 | W3 | WIRE, CON-CON 4PIN MB(CW) | 75010635 | |
| 73 | W4 | WIRE ASSY, CON-SW (SAFETY SWITCH) | 75010809 | |
| 74 | W5 | WIRE, CON-CON 5PIN BST | 75010636 | |
| 75 | W6 | CABLE, FFC, 0.5P, 28PIN | 75010630 | |
| 76 | W7 | WIRE, CON-CON12PIN-10PIN+2PIN P | 75010634 | |

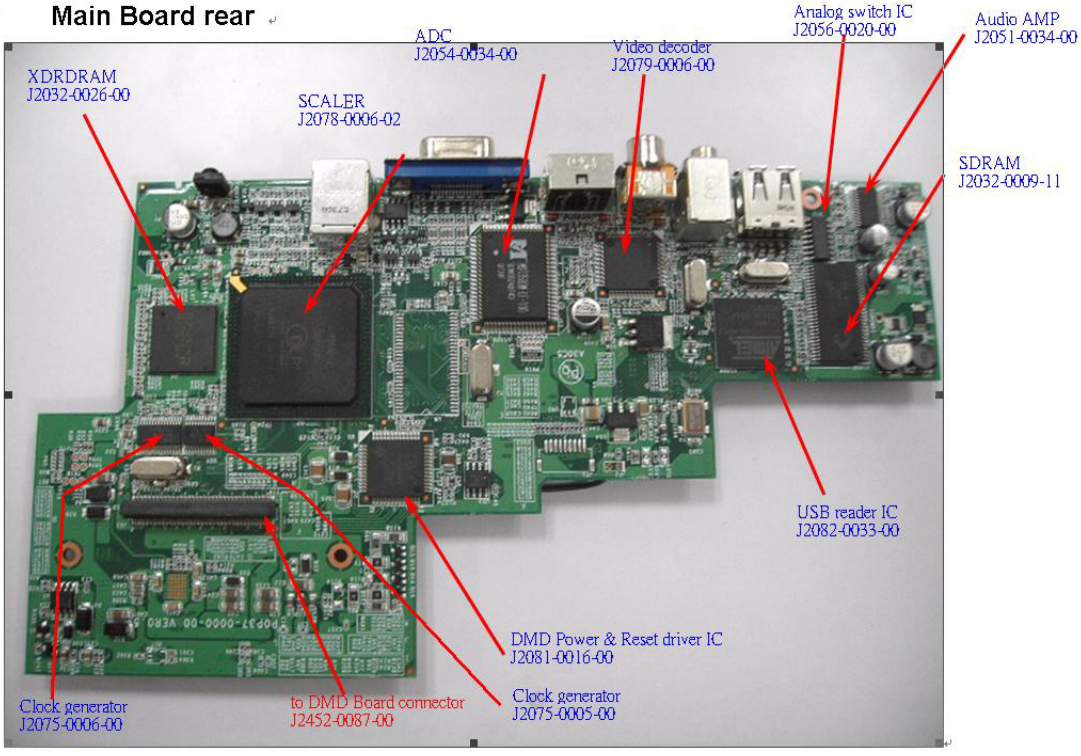
# Appendix A: Main board IC function diagram

## 1. Front side




## 2. Rear side

Main Board rear



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